Central Area Monitoring Program

A Joint Program of:
CITY OF TORONTO
MUNICIPALITY OF METROPOLITAN TORONTO
TORONTO TRANSIT COMMISSION

Fifth Annual Report — June 1991

Prepared by Metropolitan Toronto Planning Department

CENTRAL AREA MONITORING PROGRAM

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City of Toronto
The Municipality of Metropolitan Toronto
Toronto Transit Commission

FIFTH ANNUAL REPORT

Prepared by:

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June, 1991

EXECUTIVE SUMMARY

For the purpose of this report, the Central Area of Metropolitan Toronto is defined as the area bounded by Bathurst Street on the west, the CP North Toronto rail line on the north, the Moore Park Ravine and the Bayview Avenue Extension on the east and Lake Ontario on the south (see Exhibit 1).

Background and Objectives:

When all the proposed (as of December 31, 1990) new office developments within the Central Area are completed, they could accommodate up to 100,000 additional office employees. The prospect of additional employment in the Central Area brings with it the problem of accommodating additional commuting trips. Ideally, the additional trips should be accommodated without having to provide extensive additions and/or improvements to the existing transportation system (roads and transit) serving the Central Area, which is presently at or near its capacity during peak periods.

In response to growing concerns in the early 1980's regarding the possibility of increased congestion on road and transit systems serving the Central Area, a comprehensive land use and transportation monitoring program was initiated in 1985 as a joint program by Metropolitan Toronto, the City of Toronto and the Toronto Transit Commission (T.T.C.). This program relies on data collected on a regular basis from various Metro-wide surveys, as well as some special purpose surveys conducted for the Central Area.

The objectives of the Central Area Monitoring Program (C.A.M.P.) are as follows:

(i) to document a number of key Central Area variables such as transportation system usage, travel characteristics, office floor space, vacancy rates, population, housing, labour force and employment;

(ii) to identify causal transportation relationships which will facilitate the estimation of travel generated by proposed future developments; and

(iii) to identify the need and timing for additions or improvements to the transportation system required to accommodate proposed developments.

This fifth annual report, as in the past, has concentrated mostly on the first objective. However, some studies to identify causal transportation relationships are currently being undertaken by the City of Toronto and Metropolitan Toronto staff. It is expected that future C.A.M.P. reports will provide more detailed information on these relationships.

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Summary of Findings:

According to the results of the Metro Employment Survey, the total employment in the Central Area declined to about 393,000 in 1990, representing a 1.4% decrease from the previous year's level. The "Office", "Manufacturing/Wholesale", "Retail" and "Service" sectors all experienced some employment decreases while the "Institutional" sector and the employment types categorized as "Other" showed some growth.

A decrease of 2.5% in full-time employment (all sectors combined) was offset to some extent by part-time employment growth of 5.7%. The most significant part-time employment growth occurred in the "Office" sector which increased by about 23% over its 1989 level.

The Central Area employment had been steadily increasing since 1983. The decline during the past year can be attributed in part to the recent recession.

The total office space within the Central Area increased by over 330,000 sq.m., representing a 6.2% growth from 1989. However, an additional 200,000 sq.m. of existing office space was vacant. The average vacancy rate within the Central Area was almost 9% in 1990, a significant increase from 5.7% in 1989. The increase in occupied office space (net absorption) was 130,000 sq.m. during the past year. In total, over 5.7 million sq.m. of office space existed within the Central Area, by the end of 1990, with 5.2 million sq.m. occupied.

The "Office Floor Space per Worker" (FSW) ratio was calculated as 26.9 sq.m. per worker for 1990. This ratio has remained more or less constant at around 25 sq.m. per worker during the past years.

Because of some recently completed large residential developments within the Central Area, the Central Area population increased slightly between 1988 and 1989. The average vacancy rate for all the residential units within the Central Area, however, also increased to about 9% in 1989, compared to 7% in 1988. The average household size was 1.97 persons per household, slightly lower than in 1988.

The Metro Cordon Count Program, supplemented with counts conducted by the City of Toronto, the T.T.C. and GO Transit, provides a summary of vehicles and passengers flows in the Central Area. Generally, the vehicle and person flows to and from the Central Area during the a.m. and p.m. peak periods on weekdays both decreased in 1990, in the order of 5% to 10% compared to 1989 volumes. The percentage decreases in person trips were slightly less than the decreases in vehicle trips, indicating higher auto occupancies and/or increased transit modal split. The decrease in number of trips across the Central Area Cordon can be attributed, to some extent, to the decline in the Central Area employment in 1990.

It appears that the a.m. peak period average auto occupancy rate across the Central Area Cordon in the inbound direction has stabilized at around 1.24 persons per vehicle. The average auto occupancy rate across the Central Area Cordon is higher during the p.m. peak period in the outbound direction, as a result of more non-work trips.

The a.m. peak hour T.T.C. ridership at the peak points of the subway system serving the Central Area also declined by about 5% to 10% in 1990.

The number of GO Train passengers arriving at Union Station during the a.m. peak period continued to increase during 1990. The number of passengers tripled between 1977 and 1990, and increased by over 10% during the past year alone. In order to accommodate the increasing passenger demand, GO Transit has continuously increased the service and seating capacities on most lines serving the Central Area.

The number of available off-street, non-residential parking spaces within the Central Area has shown a fluctuating trend during the past decade, but increased by about 11,000 or 13% from 1980 to 1990. It increased by 4,300 (close to 5%) since 1988.

The east-west and north-south arterial roads within the Central Area experience lower average travel speeds during the off-peak (mid-day) periods compared to the a.m. and p.m. peak periods. Generally, traffic is moving along with an average travel speed of about 20 km./hr. in the Central Area, during the peak periods. The Richmond/Adelaide one-way streets in the east-west directions, and Spadina Avenue, University Avenue and Jarvis Street in the north-south directions seem to be the fastest routes.

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1.0 INTRODUCTION

The planning agencies involved in making decisions with regard to the approval of new development proposals and transportation improvements within the Central Area have to deal with the dilemma of managing growth. It is necessary to increase office development in the Central Area in order to ensure a healthy economy for the City. However, at the same time, the additional commuters generated by new developments should ideally be accommodated by the transportation system, without lowering the present level of service.

1.1 Background

In response to the growing concern about congestion both on the roads and in public transit facilities serving the Central Area, a comprehensive land use and transportation monitoring program was initiated in 1985. The Central Area Monitoring Program (C.A.M.P.) was established and the first report published in 1987. Since its inception, this annual report has provided time series information on several key land use and transportation variables such as population, housing, labour force, employment, office space supply and demand, as well as transportation system usage and travel characteristics.

This joint program involving Metropolitan Toronto, the City of Toronto and the Toronto Transit Commission (T.T.C.) relies on data collected on a regular basis across Metropolitan Toronto from various land use and transportation surveys as the main source of information. On occasion, as in the previous C.A.M.P. report for example, special purpose surveys are included (i.e. the Transportation Tomorrow Survey, the Part-Time Employment Survey and the Central Area Residents Survey). Interested readers should refer to the previous reports for more details on the findings of these surveys.

This is the fifth of a series of annual reports designed to assist the City of Toronto and Metropolitan Toronto Councils in ensuring that the increased population and

employment levels in the Central Area are met with a safe, economical and efficient network of transportation facilities, in terms of both road and transit.

1.2 Objectives

As in the previous reports, the objectives of the 1991 Central Area Monitoring Program are as follows:

(i) to document a number of key Central Area variables such as transportation system usage, travel characteristics, office floor space, vacancy rates, population, housing, labour force and employment;

(ii) to identify causal transportation relationships which will facilitate the estimation of travel generated by proposed future office developments; and

(iii) to identify the need and timing for additions or improvements to the transportation system required to accommodate proposed developments.

The C.A.M.P. reports, during past years, have concentrated on the first objective. This was because of the need for the ongoing monitoring of the Central Area land use parameters together with the transportation related variables in order to establish a suitable database. The data assembled over the years would then be utilized in the process of estimating additional travel demands generated by the new office developments within the Central Area, which is the second objective. As the third objective of this program, the necessary additions and/or improvements to the existing transportation infrastructure would then be identified in order to ensure that the transportation system can accommodate the prospect of growing population and employment in the Central Area while maintaining or improving the current level of service.

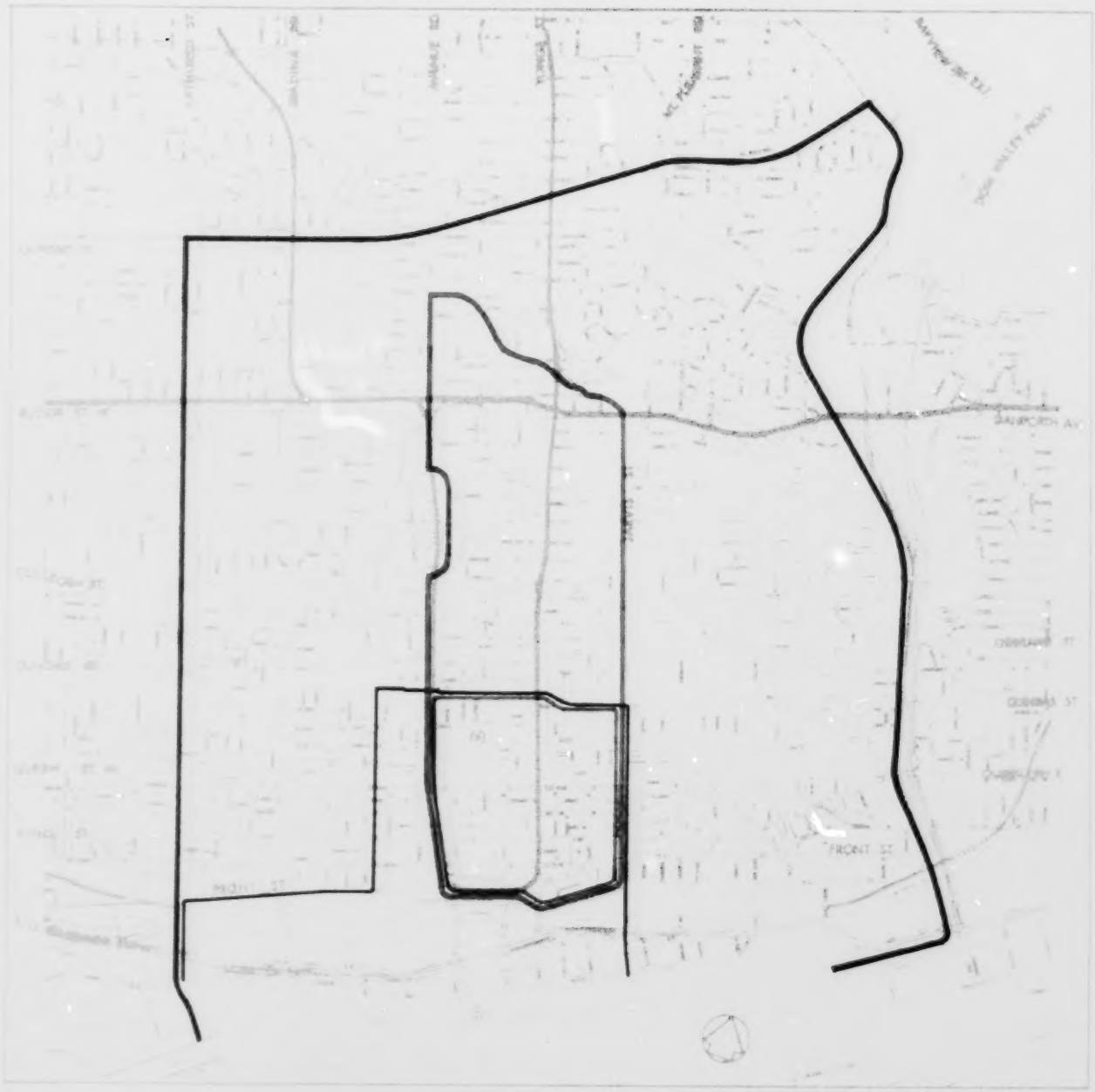
In terms of the objectives listed above, the C.A.M.P. has primarily concentrated on objective (i) since the Program was initiated in 1985. Although a considerable amount of data has already been collected since as early as 1975, it has not yet been possible to derive a strong relationship correlating the changing travel characteristics with the employment growth in the Central Area.

A detailed analysis undertaken as part of Cityplan'91 by Prof. David Nowlan of the University of Toronto and staff of the City of Toronto Planning and Development Department has formulated an important hypothesis that population growth in the Central Area could have a dramatic effect on the reduction of commuting trips to the Central Area. This study developed a mathematical relationship, based on recent survey data, between increases in Central Area population and dwelling units and trends in inbound commuter trips across the Central Area Cordon, taking into account employment growth in the Central Area. Further details may be obtained from the Cityplan'91 office of the Planning and Development Department.

The City of Toronto and Metropolitan Planning staff are continuing to investigate further details of a possible relationship between population and employment variables, as they relate trips to and from the Central Area. The relationships developed as part of the Cityplan'91, accurately represent past trends over the 1976-1988 period. However, during this same time period there were significant changes to the labour force structure of the Central Area population. While these changes are expected to continue in the future, their magnitudes will probably lessen. Therefore, these relationships should be interpreted cautiously at this stage, when used for future predictive purposes.

1.3 Study Area

For the purpose of this report, the study area involved is enclosed by the Central Area Cordon as shown in Exhibit 1.



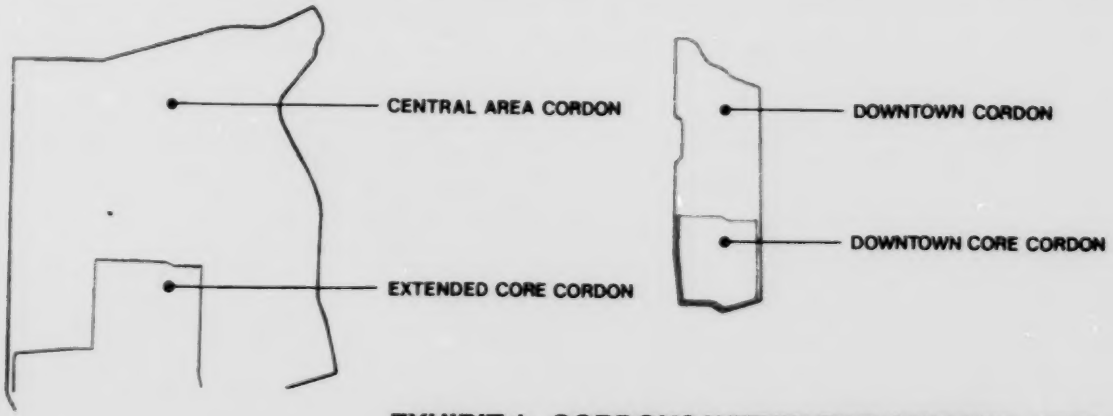


EXHIBIT 1: CORDONS WITHIN THE CENTRAL AREA

The area is bounded by Bathurst Street on the west, the Canadian Pacific North Toronto rail line on the north, the Moore Park Ravine and Bayview Avenue Extension on the east and Lake Ontario on the south. The Toronto Islands residential community, which has ferry access within the Central Area Cordon, is assumed to be included for demographic purposes. The Island Airport, however, is not included since vehicle and pedestrian access to this facility is outside the defined boundary.

Within the Central Area Cordon, three "inner" cordons have been defined. As part of the biennial Metro Cordon Count Program, inbound and outbound vehicle and person flows across these individual cordons are monitored regularly. The other three cordons are as follows:

- **Downtown Cordon** is bounded by University Avenue, Davenport Road/Church Street, Jarvis and Front Street;

- **Downtown Core Cordon**, being the smallest of the three cordons, is also referred to as the "Financial Core" of the Central Area. The western, eastern and southern boundaries are the same as the Downtown Cordon but with Dundas Street forming the northern boundary;

- **Extended Core Cordon** was specifically established for the C.A.M.P. in 1985. It is bounded by Bathurst, Front and John Streets on the west, Dundas Street on the north, Jarvis Street on the east and the Waterfront on the south. This cordon was designed to incorporate the traditional Financial District and the more recently developing areas to the west of University Avenue and south of Front Street. This cordon includes the Harbourfront area as well as the Railway Lands.

Although the boundaries are not identical, Metropolitan Planning District No. 1, (P.D.1), is identified in most other Metropolitan and City of Toronto reports as the

"Central Area". Refer to Exhibit 2 for a comparison between the boundaries of P.D.1 and the C.A.M.P. study area.

1.4 Participants

The production of the Central Area Monitoring Program relies on a wide variety of information ranging from employment data to transportation characteristics in the Central Area. Since the C.A.M.P. is undertaken as a joint program, the following departments and agencies have contributed valuable input to this report:

- Metropolitan Toronto Planning Department;
- Metropolitan Toronto Transportation Department;
- City of Toronto Planning and Development Department;
- City of Toronto Department of Public Works and the Environment;
- Toronto Transit Commission (T.T.C.), Adminstration and Planning Branch;
- GO Transit, Corporate Planning Branch; and
- Ministry of Transportation (M.T.O.), Municipal Transportation Branch.

The contributions of all these agencies are gratefully acknowledged.

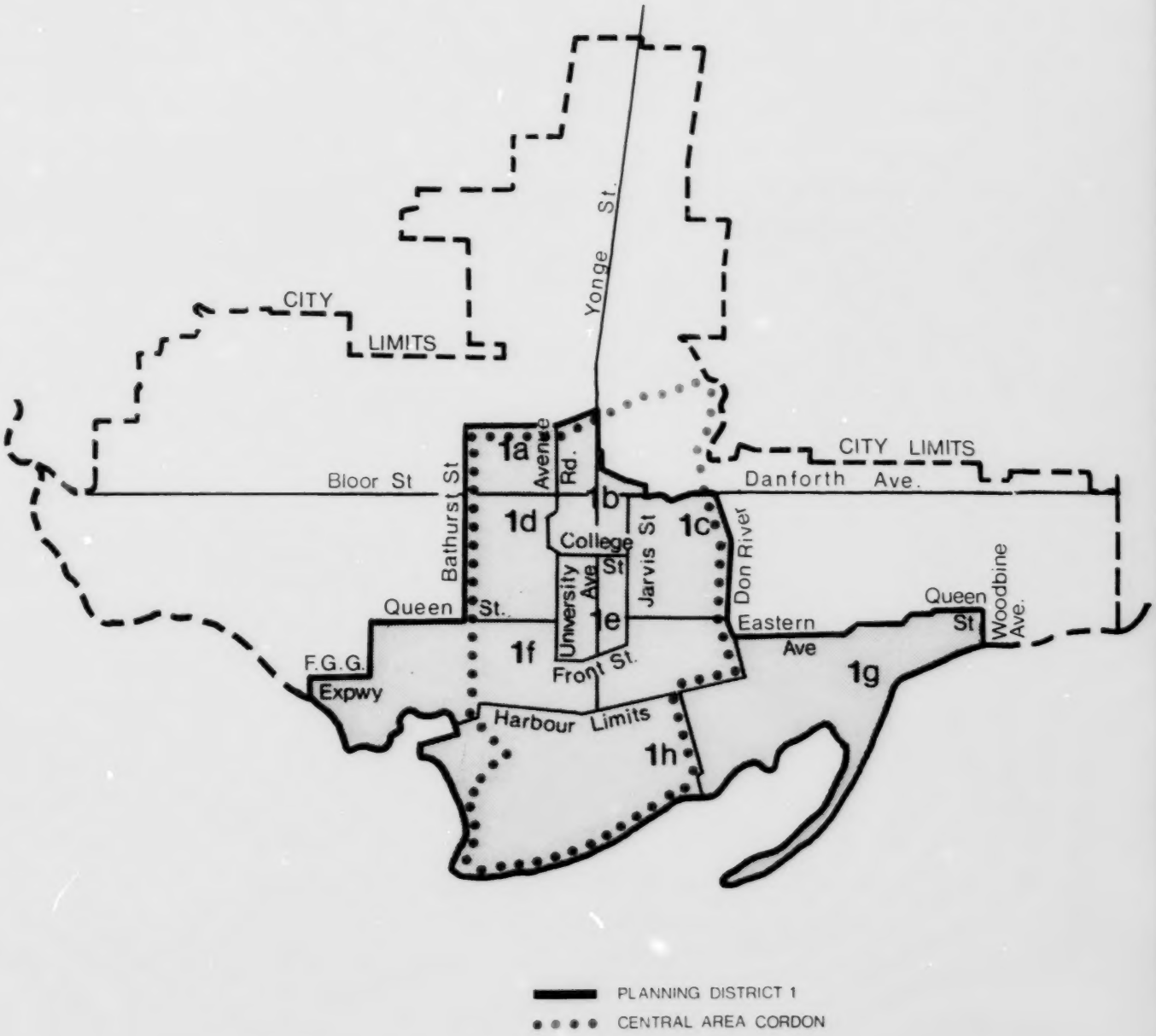


EXHIBIT 2: THE CENTRAL AREA AND PLANNING DISTRICT 1

2.0 SOURCES OF INFORMATION

Since a number of variables are monitored in the Central Area, such as employment trends, population and housing and travel characteristics, a number of information sources are used in the production of the C.A.M.P. reports. Some of the information utilized is from ongoing Metro-wide data collecting programs, while other information is from more specific surveys primarily carried out for the Central Area Monitoring Program. Unlike the previous C.A.M.P. report, the 1990 report does not feature many specialized surveys. The following is a list of the major sources of information used in the production of this report:

2.1 Metro Employment Survey

The Metropolitan Toronto Planning Department has undertaken annual surveys to provide up-to-date information on full-time and part-time employment across Metropolitan Toronto since 1983. Approximately 50 percent of the establishments classified as non-residential for assessment purposes are surveyed each year, throughout Metropolitan Toronto. However, in connection with C.A.M.P., the sample rate within P.D.1 has been 100 percent since 1986, to provide greater accuracy.

2.2 Office Space Data Bank

A computerized Data Bank of the existing and proposed office space throughout Metro, as well as information regarding the stages of development for the proposed offices, is maintained by the Metropolitan Planning Department. Information for Central Area office space is obtained from the City of Toronto. In addition, Royal LePage conducts an annual survey of rented and vacant space in office buildings with over 20,000 sq.ft. (1,860 sq.m.) of net rentable office area.

2.3 Provincial Assessment Files

Population and the number of dwelling units by type within the Central Area are obtained each year from the Provincial Assessment Files.

2.4 Metro Cordon Count and Other Counting Programs

The Metro Cordon Count Program involves one-day manual roadside counts of the number of vehicles by class (i.e. autos, taxis, buses and trucks) as well as the number of occupants of private autos, taxis and buses across a series of screenlines, during the months of May and June. All data is recorded by 15-minute periods from 6:30 a.m. to 11:30 p.m.. Roadside counts are supplemented by subway and GO train counts provided by the T.T.C. and GO Transit respectively, at these screenlines. The Central Area and Extended Core Cordons are counted annually, but the Downtown and Downtown Core Cordons have been counted every two years since 1986.

2.5 Off-Street Parking Inventory

The City of Toronto Department of Public Works and the Environment keeps an inventory of the supply of off-street parking spaces in the Central Area, excluding Rosedale. Data has been collected every second year since 1980, for various sub-areas within the Central Area including the Downtown Core.

2.6 Speed and Delay Study

A Speed and Delay Survey was first conducted in 1988 and repeated in 1990. The purpose of this survey is to obtain information about the average journey speeds and overall delays along the major north/south and east/west arterial roads within the Central Area.

3.0 FINDINGS

3.1 Employment

The total employment within the study area had increased by more than 20,000 between 1988 and 1989, bringing the total number of individuals working in the Central Area to almost 400,000 last year. However, the 1990 survey results show that the total employment within the Central Area decreased by almost 6,000 between the summer of 1989 and the summer of 1990. The most significant decrease occurred in the northern portion of the Downtown Core (north of Dundas Street). This area lost almost 5,000 jobs, a stark contrast to last year when this same area experienced an increase of over 6,000 jobs.

A graphical illustration of employment within the four cordons is presented in Exhibits 3 to 6. These charts depict full-time, part-time and total employment for each of the six employment sectors between the years 1983 and 1990. Exhibit 7 shows the combined employment for all sectors in the sub-areas that constitute the Central Area. Office sector employment numbers are presented separately in Exhibit 8.

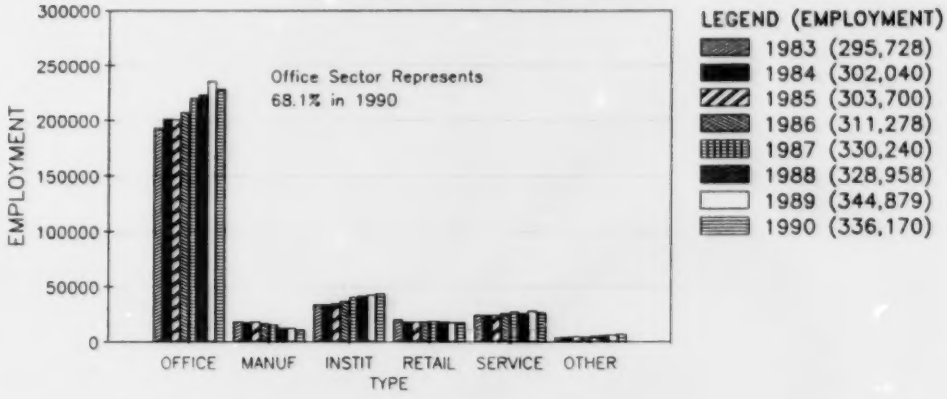
The employment changes within each cordon during 1990 can be summarized as follows:

3.1.1 Central Area Cordon

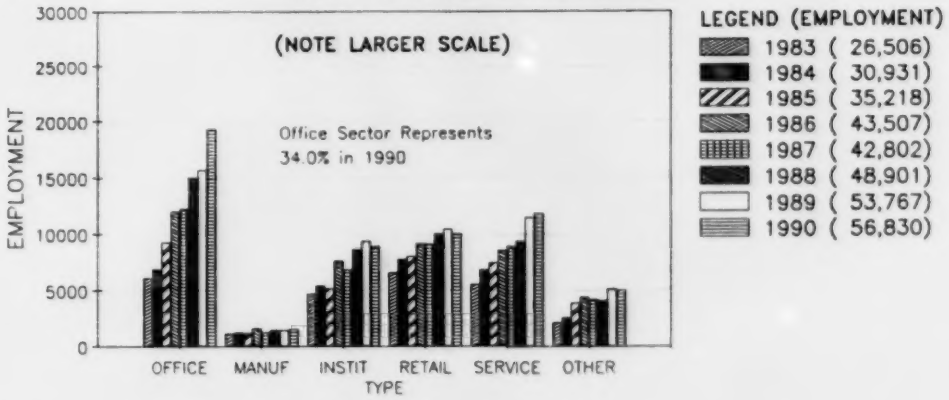
The total employment in the Central Area showed a decrease of nearly 6,000 jobs during the past year. From 1983 to 1989, employment had been steadily increasing in the Central Area. Total employment growth was particularly high in 1987 and 1989, with greater than 5% increases over the previous years.

EXHIBIT 3: EMPLOYMENT WITHIN CENTRAL AREA CORDON, 1983-1990

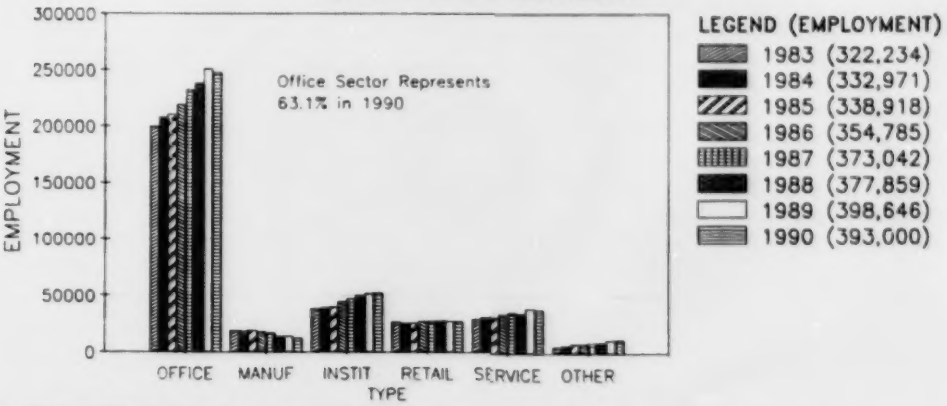
(a) FULL-TIME EMPLOYMENT



(b) PART-TIME EMPLOYMENT



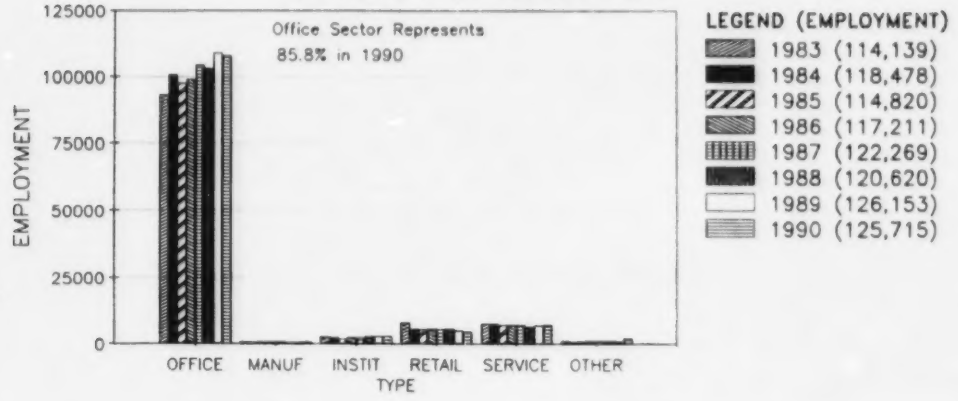
(c) TOTAL EMPLOYMENT



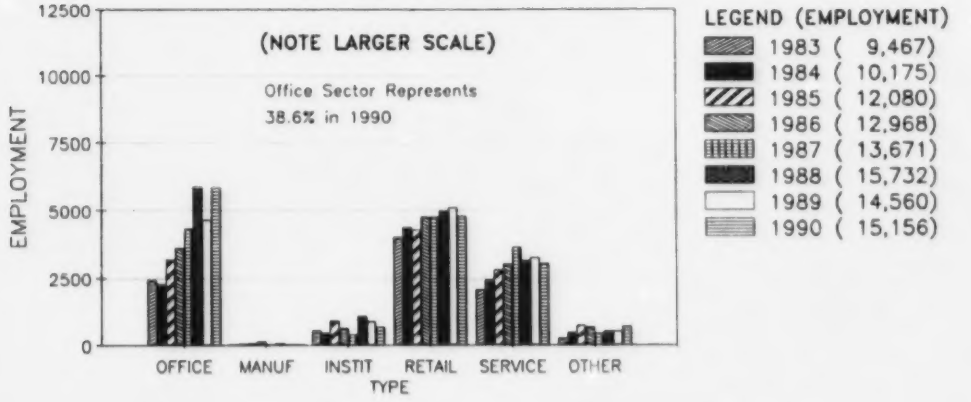
SOURCE: METRO PLANNING E.L.A. DATA BANK

EXHIBIT 4: EMPLOYMENT WITHIN DOWNTOWN CORE CORDON, 1983-1990

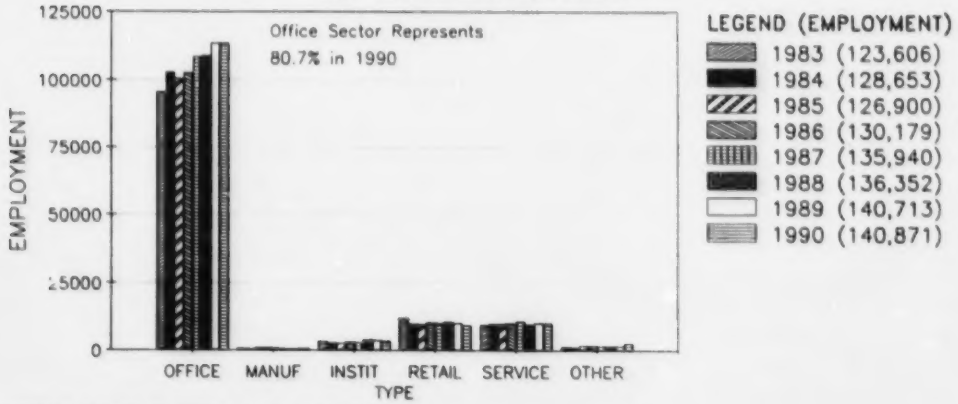
(a) FULL-TIME EMPLOYMENT



(b) PART-TIME EMPLOYMENT



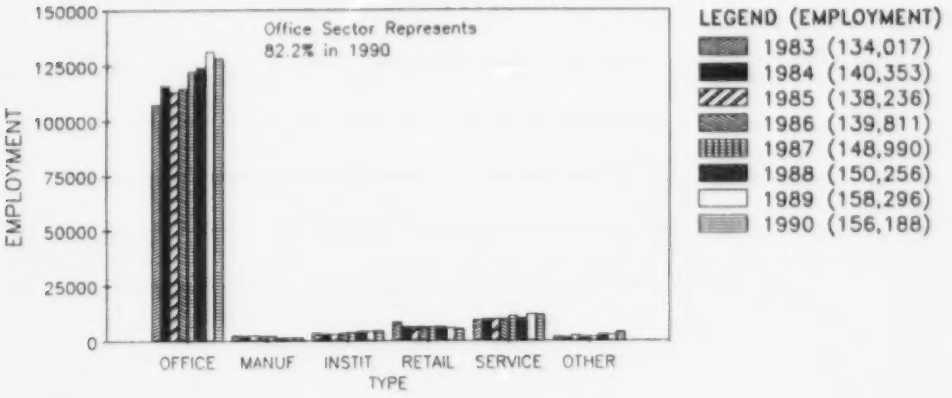
(c) TOTAL EMPLOYMENT



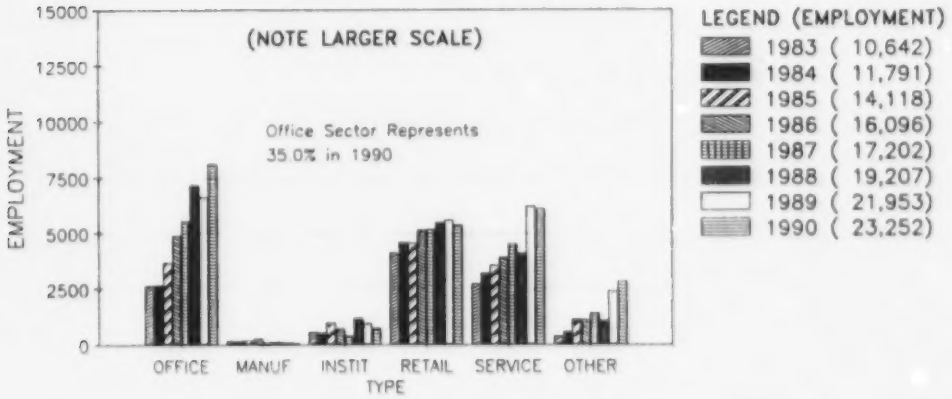
SOURCE: METRO PLANNING E.L.A. DATA BANK

EXHIBIT 5: EMPLOYMENT WITHIN EXTENDED CORE CORDON, 1983-1990

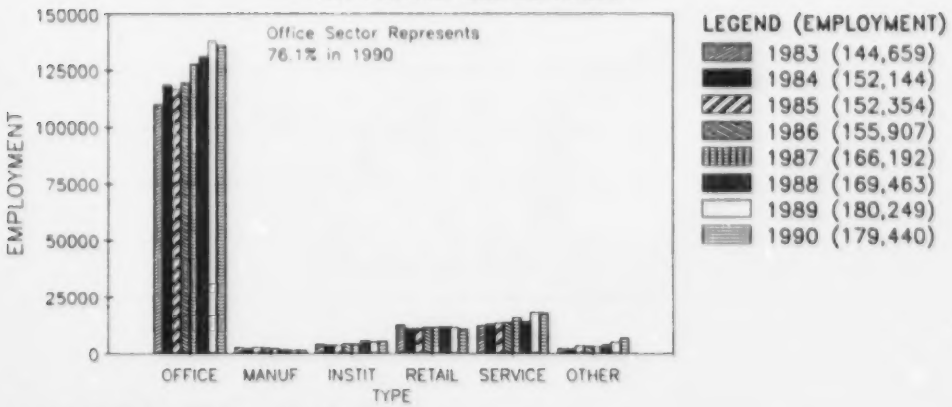
(a) FULL-TIME EMPLOYMENT



(b) PART-TIME EMPLOYMENT



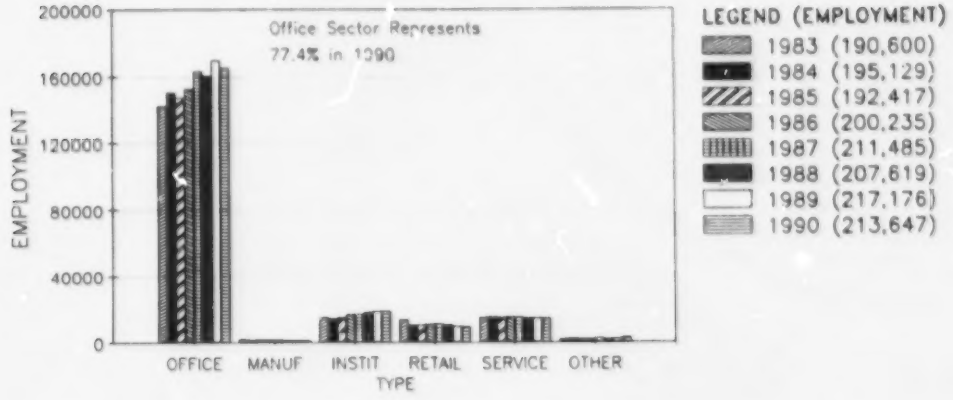
(c) TOTAL EMPLOYMENT



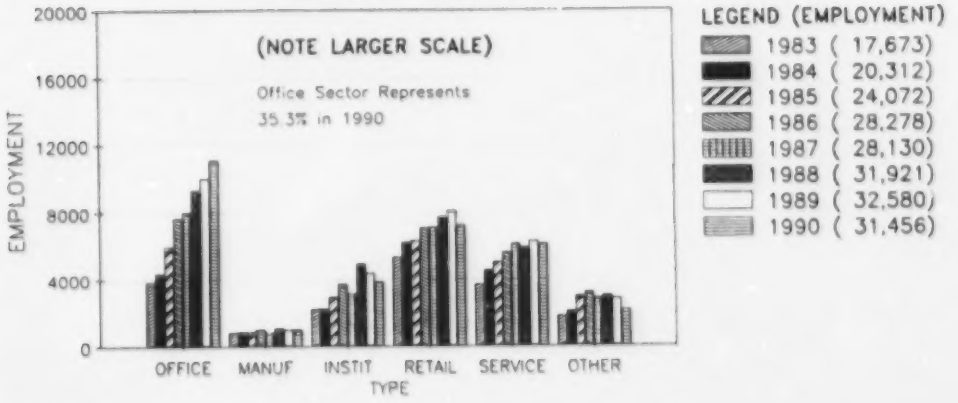
SOURCE: METRO PLANNING E.L.A. DATA BANK

EXHIBIT 6: EMPLOYMENT WITHIN DOWNTOWN CORDON, 1983-1990

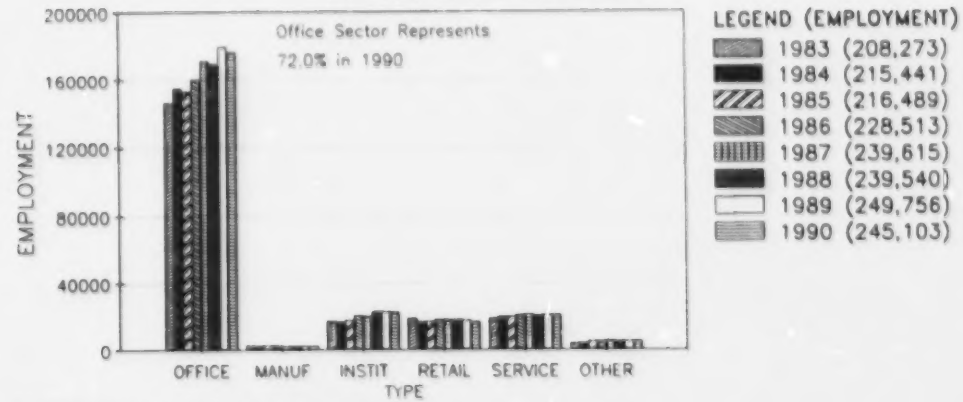
(a) FULL-TIME EMPLOYMENT



(b) PART-TIME EMPLOYMENT



(c) TOTAL EMPLOYMENT



SOURCE: METRO PLANNING E.L.A. DATA BANK

EXHIBIT 7: EMPLOYMENT GROWTH BY SUB-AREA, 1989-1990

Full-Time Employment	F= -8,700
Part-Time Employment	P= 3,100
TOTAL EMPLOYMENT	**T= -5,600**

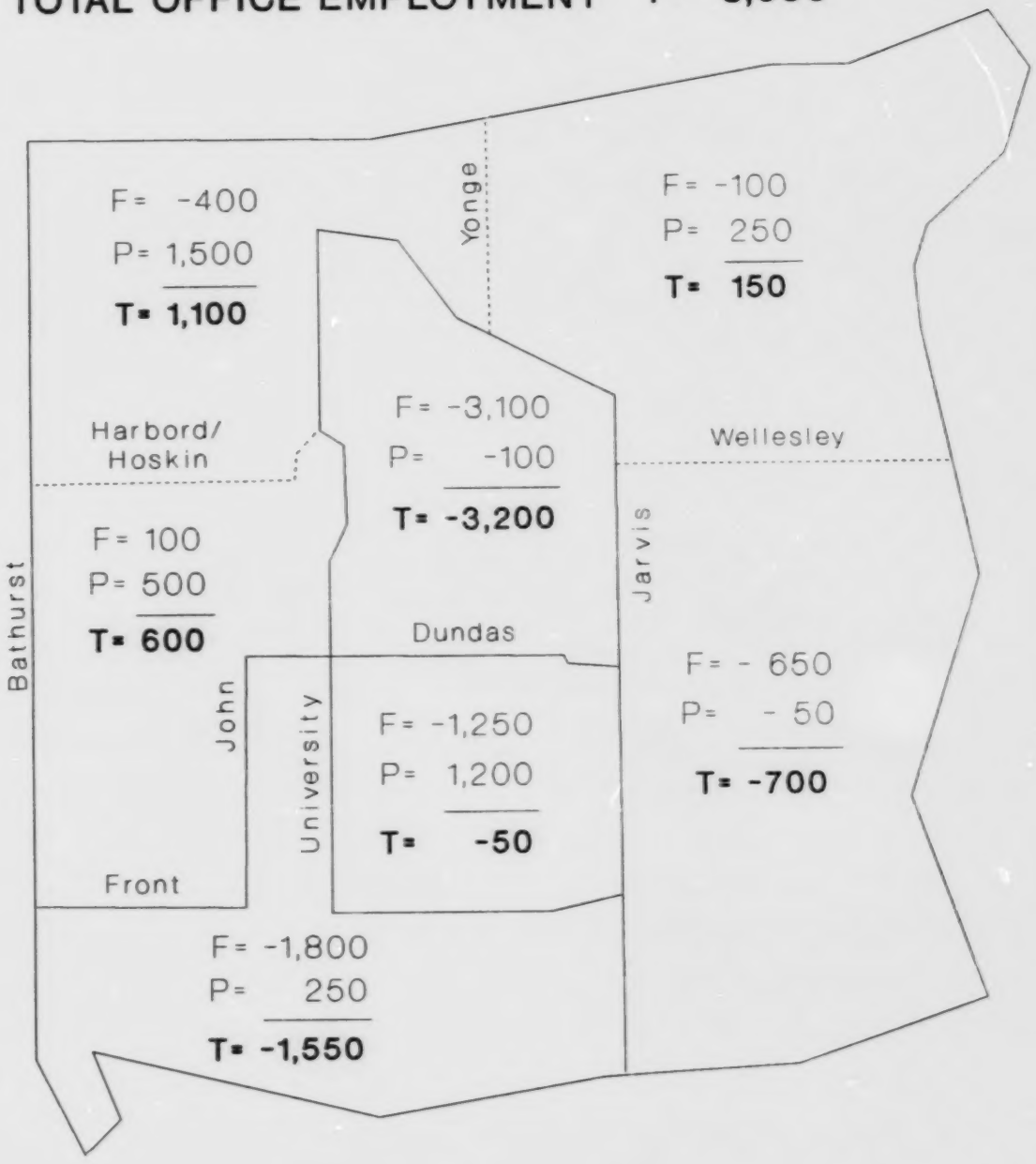
Source: Metro Planning F.I.A. Data Bank

EXHIBIT 8: OFFICE EMPLOYMENT GROWTH BY SUB-AREA, 1989-1990

Full-Time Office Employment F= -7,200

Part-Time Office Employment P= 3,550

TOTAL OFFICE EMPLOYMENT T= -3,650



Source: Metro Planning E.L.A. Data Bank

The 1990 employment survey reveals that there were about 6,000 fewer jobs in the Central Area compared to 1989. Even though the percentage decline was not very significant (1.4%), the 1990 employment numbers represent the first time that a decrease in total employment has been recorded for the Central Area since data collection began in 1983.

Exhibits 7 and 8 provide maps of total employment and total office employment in the Central Area Cordon by sub-areas. In both Exhibits, the block enclosed by University Avenue, Davenport Road, Jarvis and Dundas Street (northern portion of the Downtown Cordon) shows the largest decrease in employment, while the north-west corner of the Central Area has the highest total increase.

PERCENTAGE CHANGES IN TOTAL EMPLOYMENT: 1989 TO 1990

Office	Manuf	Instit	Retail	Service	Other	**Total**
↓ 1.4%	↓ 12.2%	↑ 1.2%	↓ 0.8%	↓ 3.3%	↑ 5.6%	**↓ 1.4%**

In 1989, there was an increase of about 16,000 full-time and 5,000 part-time jobs compared to 1988. In 1990, instead of an increase, there is a decrease of nearly 9,000 full-time jobs in the Central Area. Part-time employment, however, continued to grow, although the 3,000 new part-time jobs are about 40% less than experienced in 1989. The lack of full-time employment opportunities may have driven prospective employees to seek part-time employment. The Office sector remains the largest part-time employer, representing the largest increase over last year with an additional 3,575 part-time jobs in 1990.

PERCENTAGE CHANGES IN FULL-TIME EMPLOYMENT: 1989 TO 1990

Office	Manuf	Instit	Retail	Service	Other	**Total**
↓ 3.0%	↓ 14.4%	↑ 2.6%	↑ 0.9%	↓ 5.8%	↑ 11.3%	↓ **2.5%**

The ratio of part-time employment to total employment (of all the sectors combined) continued to increase, although total employment has declined. In 1988 this ratio was 12.9%. It reached 13.5% in 1989, and climbed to 14.5% in 1990. Exhibit 9 provides a graphical representation of this information.

PERCENTAGE CHANGES IN PART-TIME EMPLOYMENT: 1989 TO 1990

Office	Manuf	Instit	Retail	Service	Other	**Total**
↑ 22.7%	↑ 6.7%	↓ 4.8%	↓ 3.7%	↑ 2.8%	↓ 1.8%	↑ **5.7%**

It is difficult to establish a trend in terms of full-time and part-time employment in the Central Area. Exhibit 10 relates this information quite well by showing how the percentage increases in full-time employment, since 1983, follow an undulating pattern. The trend in part-time employment is just as elusive.

3.1.2 Downtown Core Cordon

The Employment Survey shows that the net increase in total employment in the Downtown Core Cordon was only 160 in 1990, significantly lower than the 4,360 in 1989. The most significant differences in total employment occurred in the Retail sector, with an employment decrease of 7.7%, and in the sector classified as "Other",

EXHIBIT 9: FULL-TIME AND PART-TIME EMPLOYMENT GROWTH WITHIN CENTRAL AREA, 1983-1990

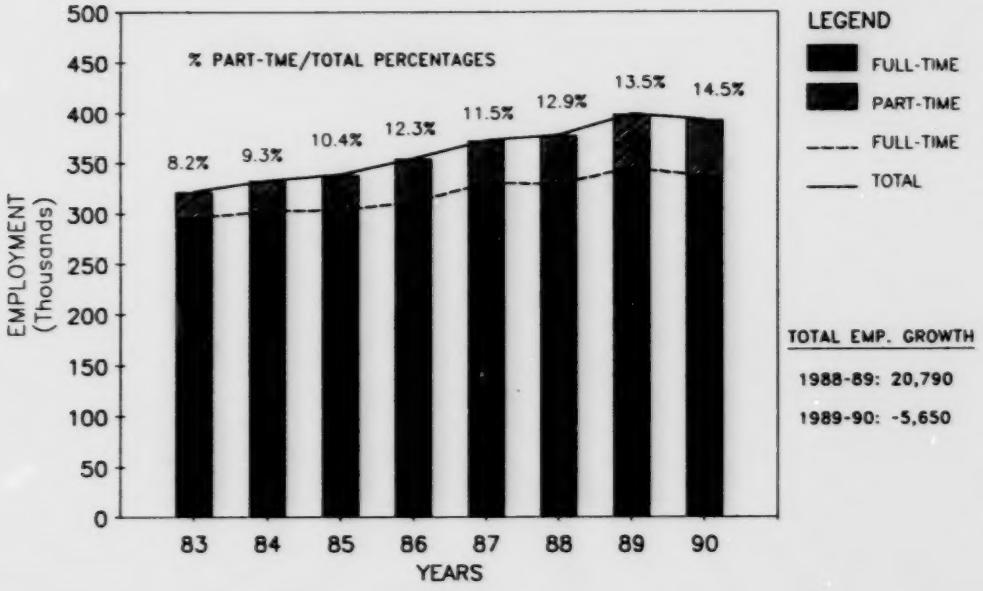
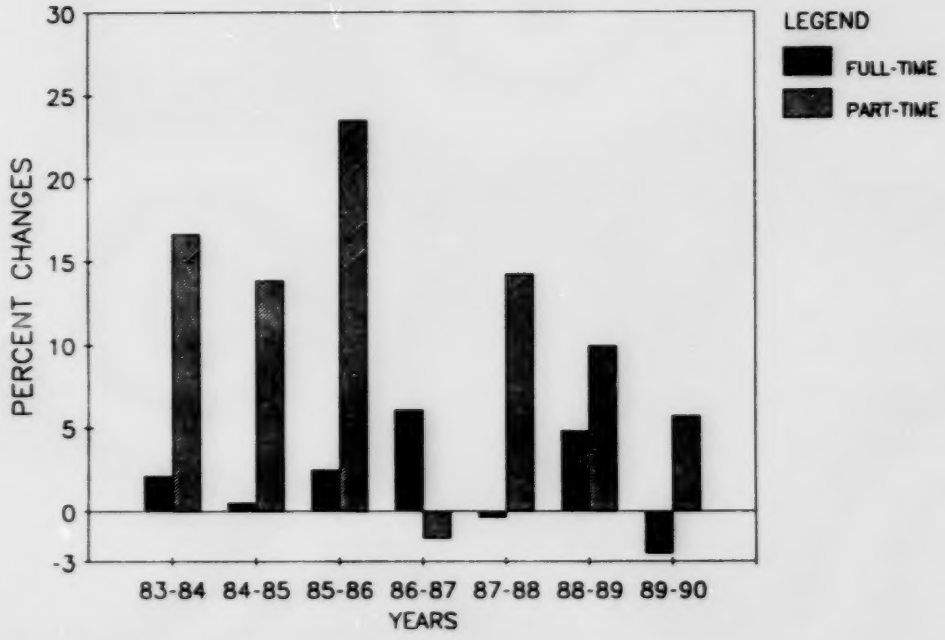


EXHIBIT 10: PERCENT ANNUAL CHANGES IN FULL-TIME AND PART-TIME EMPLOYMENT WITHIN CENTRAL AREA



with an increase of 64.6%. The remaining employment sectors had marginal changes.

Total full-time employment declined by only 0.3% bringing the total to 125,715 full-time workers. Office, Institutional and Retail sectors experienced decreases while Manufacturing and Service had marginal increases. Full-time employment which was classified under the "Other" category grew substantially with an increase of 79.6% over 1989 figures. Unlike last year, part-time employment in the Downtown Core Cordon experienced an increase with the Office sector's 25% rise accounting for the majority of growth. In terms of total employment, the Office sector in this cordon, traditionally known as the financial district, represented 80.7%, almost identical to the 80.8% in 1989.

3.1.3 Extended Core Cordon

The minor reduction in total employment in the Extended Core Cordon contributed to the overall decline in total employment within the Central Area. The Office sector once again represented the majority of the decreases with a 1.2% drop in total employment. Service, Retail, and Manufacturing and Wholesaling all contributed to the decline in total employment.

Institutional and "Other" are the only sectors that experienced growth in full-time employment in 1990. Overall, total full-time employment decreased by over 2,000, or 1.3%, within the Extended Core Cordon. In the sub-area excluding the Downtown Core, there was a substantial decrease in employment. The loss of over 1,600 full-time jobs is contrasted against the increase of 2,500 in 1989. When total employment is compared within this sub-area, the decrease of almost 1,000 workers again stands in contrast to the increase of over 6,000 recorded in 1989.

Similar to the Downtown Core Cordon, total part-time employment within the Extended Core Cordon increased in 1990 with the Office sector leading the way with

an increase of nearly 1,500 jobs or 21.9% growth over 1989. It is expected that with the significant development proposed for the Railway Lands, total employment in the Extended Core Cordon could increase in future years.

3.1.4 Downtown Cordon

The total employment in the Downtown Cordon has decreased significantly. The decline of over 4,500 in 1990 is significant, considering that in 1989 the Downtown Cordon had an increase of over 10,000 workers. All employment sectors, with the exception of "Other", experienced a decrease.

In terms of full-time employment, the loss of over 4,000 jobs in the Office sector accounted for the majority of the 1.6% reduction in total full-time employment within the Downtown Cordon. Only Institutional and "Other" managed slight increases. In the sub-area excluding the Downtown Core Cordon, there was a substantial reduction in full-time employment. The loss of over 3,000 workers represented the largest full-time decrease in any of the sub-areas within the Central Area Cordon.

The total part-time employment scenario differs from the other cordons because there was actually a decrease. In fact, the Office sector was the only employment area to show a slight increase in part-time workers. The other five sectors showed some decreases.

3.1.5 Periphery of the Central Area

As Exhibit 7 illustrates, the highest total employment growth, outside of the inner cordons, occurred in the area bounded by Bathurst Street on the west, Canadian Pacific North Toronto rail line to the north, University Avenue/Davenport Road/Yonge Street to the east and Harbord Street/Hoskin Avenue to the south. Additionally, this north-western sub-area experienced the highest increase in part-time employment accounting for 70% of the total part-time employment growth within the Central Area Cordon.

The south-eastern periphery, enclosed by Jarvis and Wellesley Streets, the Bayview Avenue Extension and Lake Ontario, recorded the highest total employment reductions in 1990. This sub-area lost over 1,700 full-time workers.

Unlike the previous year, when all seven sub-areas within the Central Area Cordon recorded increases in full-time employment, in 1990 all sub-areas experienced decreases, with the northern portion of the Downtown Cordon leading the way.

3.1.6 Summary

The 1990 Metropolitan Employment Survey reveals that the employment increases experienced in 1989 throughout the Central Area did not continue in 1990. In fact, total Central Area employment decreased by 1.4% compared to 1989. The main sectors recording employment decreases were Office, Manufacturing and Wholesaling, as well as the Service sector. Although there was a reduction in total employment, it must be kept in mind that some jobs may have relocated elsewhere in Metropolitan Toronto or the surrounding Regions.

The significant increases in total part-time employment offset, to some extent, the reductions in total full-time employment. The Office sector had the highest growth with a 22.7% increase over 1989 part-time totals. Between 1988 and 1989, there was only a 4.4% increase in the part-time office employment.

Generally, employment has been increasing steadily within the Central Area Cordon since 1983 and, other than the 1989 figures, the only other year employment increased by more than 5% over the previous year was in 1987, when the employment grew by 5.1% over the 1986 totals.

To sustain or increase the current level of employment a year after a significant growth occurred would require a stable employment base in terms of new job opportunities, and a healthy economy. In 1990, it would appear that the employment

situation in the Central Area Cordon could not continue the increasing trends of the past, in part because of the current recession which has caused staff layoffs and business closures in many areas.

3.2 Office Demand and Supply

This section summarizes the office market conditions and the average "Office Floor Space per Worker" index for the Central Area.

3.2.1 Office Market Conditions

The Spring 1991 edition of the annual Royal LePage "Toronto Office Leasing Directory" report summarizes the results of a survey of all office buildings with over 1,858 sq.m. (20,000 sq.ft.) of net rentable office floor area. Although the boundaries used in this report do not correspond exactly to the cordons used for C.A.M.P., their "Downtown" district corresponds approximately to the Central Area Cordon south of Bloor Street. As well, their "Bloor" area coincides roughly with the northern portion of the Central Area Cordon. For the purpose of analysis, the office characteristics of the Royal LePage "Downtown" district and "Bloor" area will be combined as the best approximation of the Central Area Cordon.

The total office space increased by about 332,000 sq.m. (3.58 million sq.ft.) within the Central Area between 1989 and 1990, representing a 6.2% growth. This reflects the completion of several office developments begun in the "boom" period of 1987 to 1989. However, there was a significant increase in the amount of vacant space as well, and an additional 201,000 sq.m. (2.17 million sq.ft.) of office space was vacant at the end of 1990. This may be due largely to the recession and partly to the fact that some employers are moving their offices out of the Central Area, possibly into the suburban fringes.

In terms of vacancy rates, 8.9% of all the office space in the "Downtown" district and the "Bloor" area combined were vacant at the end of 1990, a significant increase from the 5.7% recorded in 1989. By the end of last year, a total of 5.72 million sq.m. of office space was available in the Central Area, and 5.21 million sq.m. was occupied. The increase in occupied office space (net absorption) during the past year was reported as 131,000 sq.m. It would appear that the "Financial Core" recorded the highest amount of vacant space at about 334,000 sq.m. (3.59 million sq.ft.). The significant losses in full-time office employment within the Central Area may be responsible, to some extent, for the higher vacancy rates.

3.2.2 Office Floor Space Index

The "Office Floor Space per Worker" (FSW) ratio is calculated using the office employment estimates from the Metro Employment Survey and the amount of net occupied office space from the Office Data Bank compiled by Metropolitan Toronto Planning Department. This ratio, within P.D.1, has been calculated at 26.89 sq.m. per worker for 1990. Since the office employment throughout the Central Area has decreased during the past year while occupied space has increased, it would be expected that the FSW Index would be higher compared to its level a year earlier assuming that some firms may have reduced staff without decreasing office space in the same proportion.

The FSW ratio has been more or less constant at about 25.0 sq.m. per worker during the past years, although relatively minor variations have been experienced from year to year. Therefore, for the purpose of estimating additional employment generated by new developments a FSW ratio of 25.0 sq.m. per worker has always been used in the previous C.A.M.P. reports. Although this ratio has been calculated as 26.89 sq.m. per worker for 1990, an average value of 25.0 sq.m. per worker can still be used for long term employment and travel forecasts.

3.3 Population and Housing

At the time this report was being produced, the 1990 population data from the Provincial Assessment files had not yet been assembled. However, the 1989 data, which was not included in last year's C.A.M.P., is included in this report. Exhibit 11 summarizes the population and existing housing stock for each cordon within the Central Area from 1981 to 1989. Additionally, Exhibit A.2 in the Appendix provides information regarding the number of dwelling and vacant units within the Central Area by dwelling type.

As shown in Exhibit 11, although the number of units within the Central Area increased by 4.6%, the population only increased by approximately 1%. The recent completion of a number of large residential developments may attract more people into the Central Area in the near future. In terms of individual cordons, the Extended Core Cordon had the highest increases in both the number of units (35.2%) and population (7.9%) between 1988 and 1989.

As shown in Exhibit A.2 in the Appendix, a significant increase in apartment type dwelling units occurred between 1988 and 1989 within the Central Area Cordon. The 45% increase in apartment type dwellings in the Extended Core Cordon accounted for the majority of the increases in total dwelling units.

Approximately 32% of all the dwelling units are within the inner three cordons, of which 84% are apartment type (condominium or rental). These figures represent a slight increase over 1988. The average number of persons per household within the Central Area, as can be calculated from Exhibit A.2, is 1.97, somewhat lower than recorded in 1988. This figure was calculated by dividing population within the Central Area by net occupied units. The average household size is higher in the fringe areas than in the inner cordons.

EXHIBIT 11: POPULATION AND DWELLING UNITS WITHIN CORDONS, 1981–1989

YEARS	CENTRAL AREA		DOWNTOWN CORE		EXTENDED CORE		DOWNTOWN	
	NO. OF UNITS	POP.	NO. OF UNITS	POP.	NO. OF UNITS	POP.	NO. OF UNITS	POP.
1981	N/A	120,755	N/A	705	N/A	3,975	N/A	22,090
1982	N/A	123,470	N/A	710	N/A	4,195	N/A	22,305
1983	N/A	125,105	N/A	1,040	N/A	4,795	N/A	23,245
1984	64,559	125,810	979	1,305	2,602	5,105	15,701	23,585
1985	66,007	127,845	1,071	1,700	2,694	5,700	16,456	25,660
1986	67,392	128,620	1,128	1,765	3,414	6,280	16,516	25,970
1987	69,095	131,560	1,280	1,800	3,773	6,515	17,574	27,520
1988	70,777	131,245	1,342	2,120	4,337	7,665	18,294	27,440
1989	74,022	132,437	1,482	2,200	5,865	8,271	19,303	28,444
% GROWTH (88 to 89)	4.6%	0.9%	10.4%	3.8%	35.2%	7.9%	5.5%	3.7%
% GROWTH (84 to 89)	14.7%	5.3%	51.4%	68.6%	125.4%	62.0%	22.9%	20.6%

Source: Provincial Assessment Files, HDB (Property File)

The average vacancy rate for all residential units within the Central Area in 1989 was about 9%, a 2% increase over the 1988 figure. This seems to be significantly high, considering that the average vacancy rate for rental apartment buildings throughout Metropolitan Toronto has been near zero during the past years.

The number of vacant units within the Central Area Cordon increased to a high of almost 6,900. This represents a 39% increase over the number of vacant units in 1988. The area enclosed by the Extended Core Cordon experienced a large increase in the number of vacant units, possibly due to the number of residential developments which have recently been completed and the difficulty of marketing high-cost condominium and rental units.

Population growth in the Central Area has been encouraged in recent years in order to offset, to some extent, the increases in commuter trips into the Central Area due to the additional office space built. However, since the vacancy rates for new dwelling units within the Central Area seem to be highly unpredictable for any given year, it would appear to be difficult to estimate the precise effects over the short term of building more residential units for the purpose of increasing population in order to reduce commuter travel demand.

The Assessment data is compiled from an annual self-administered mail-back survey, whose main purpose is to provide information for property taxes. Population counts are probably most accurate for municipal election years (e.g. 1988, 1991) when the Assessment is used to compile electoral rolls.

3.4 Transportation System Usage and Travel Characteristics

This section summarizes:

- the person and vehicle flow data collected under the Metro Cordon Count program;
- off-street parking inventory; and

- the results of the 1990 Speed and Delay Study.

3.4.1 Person and Vehicle Flows

(i) Cordon Counts

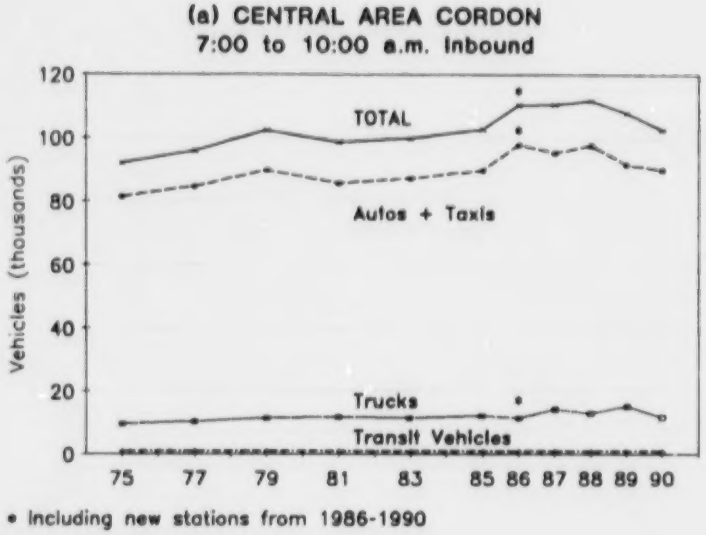
The Central Area and the Extended Core Cordons were counted specially for the C.A.M.P. in 1990, and the inner cordons, i.e. the Downtown and the Downtown Core Cordons, were counted by the City of Toronto as part of their regular biennial counting program for these locations.

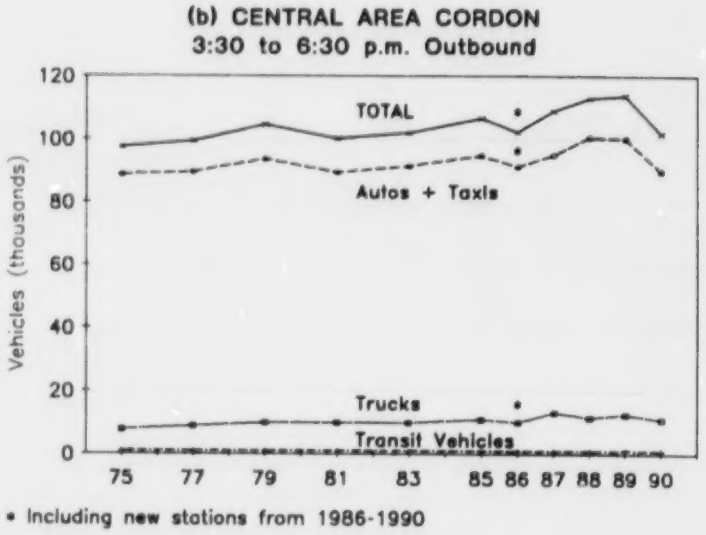
The historical trends in vehicular and passenger flows for the a.m. peak period (7:00-10:00 a.m.) inbound direction and p.m. peak period (3:30-6:30 p.m.) outbound direction across the four cordons are graphically illustrated in Exhibits 12 through 15 for the years from 1975 to 1990 (since 1985 for the Extended Core Cordon). The detailed vehicle and passenger volumes for each cordon are tabulated in the Appendix, (Exhibits A.3 through A.10).

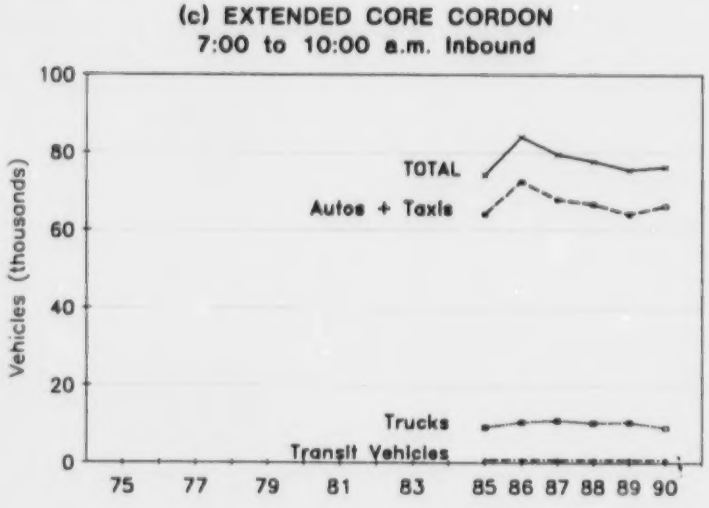
It should be kept in mind that the Cordon Count Program provides *one-day* manual roadside counts of vehicles and occupants and it is affected by various unpredictable factors such as weather, accidents and road construction and maintenance activities.

It should also be noted that, in 1986 and 1988 when the outer cordons were counted separately during the even years (i.e. not as part of the comprehensive Cordon Count Program), the actual numbers of persons in autos and taxis were not counted but instead were estimated using the average auto occupancy rates from the previous years. In 1990, however, the actual number of persons was counted. This may have caused slight discrepancies in terms of comparison of person trips on an annual basis.

EXHIBIT 12: PEAK PERIOD VEHICLES CROSSING OUTER CORDONS, 1975-1990







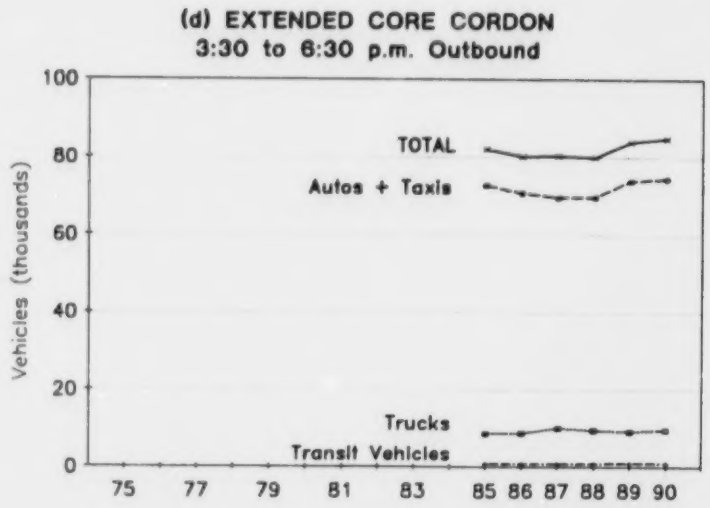
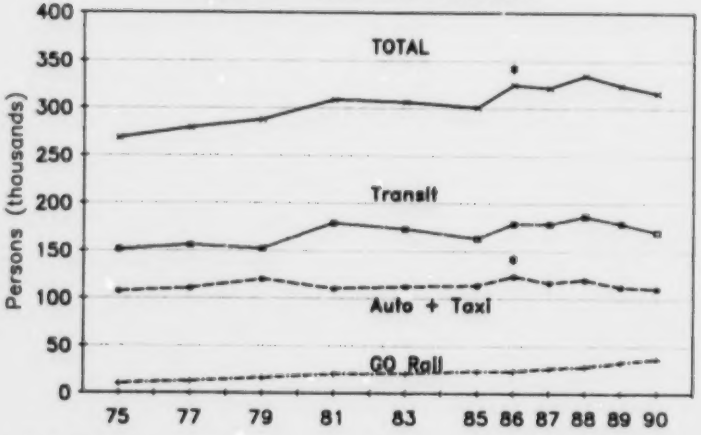


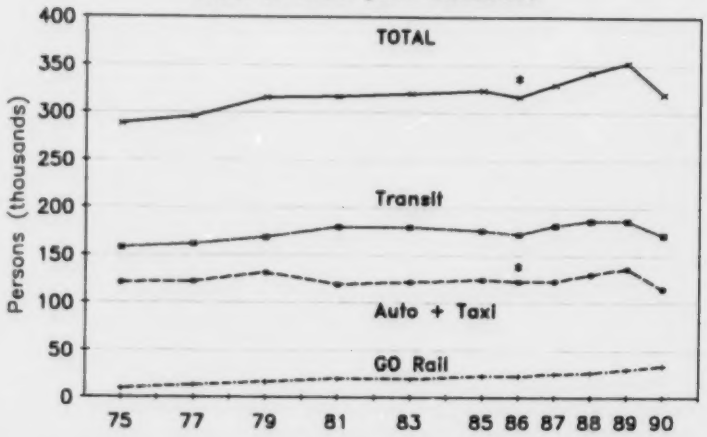
EXHIBIT 13: PEAK PERIOD PERSONS CROSSING OUTER CORDONS, 1975-1990

(a) CENTRAL AREA CORDON
7:00 to 10:00 a.m. Inbound



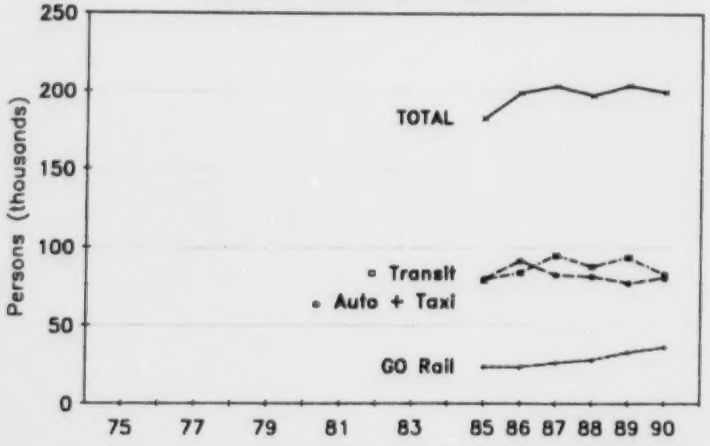
* Including new stations from 1986-1990

(b) CENTRAL AREA CORDON
3:30 to 6:30 p.m. Outbound



* Including new stations from 1986-1990

(c) EXTENDED CORE CORDON
7:00 to 10:00 a.m. Inbound



(d) EXTENDED CORE CORDON
3:30 to 6:30 p.m. Outbound

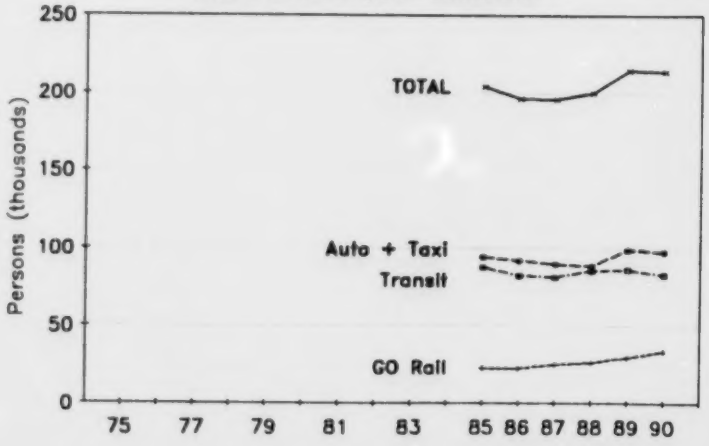


EXHIBIT 14: PEAK PERIOD VEHICLES CROSSING INNER CORDONS, 1975-1990

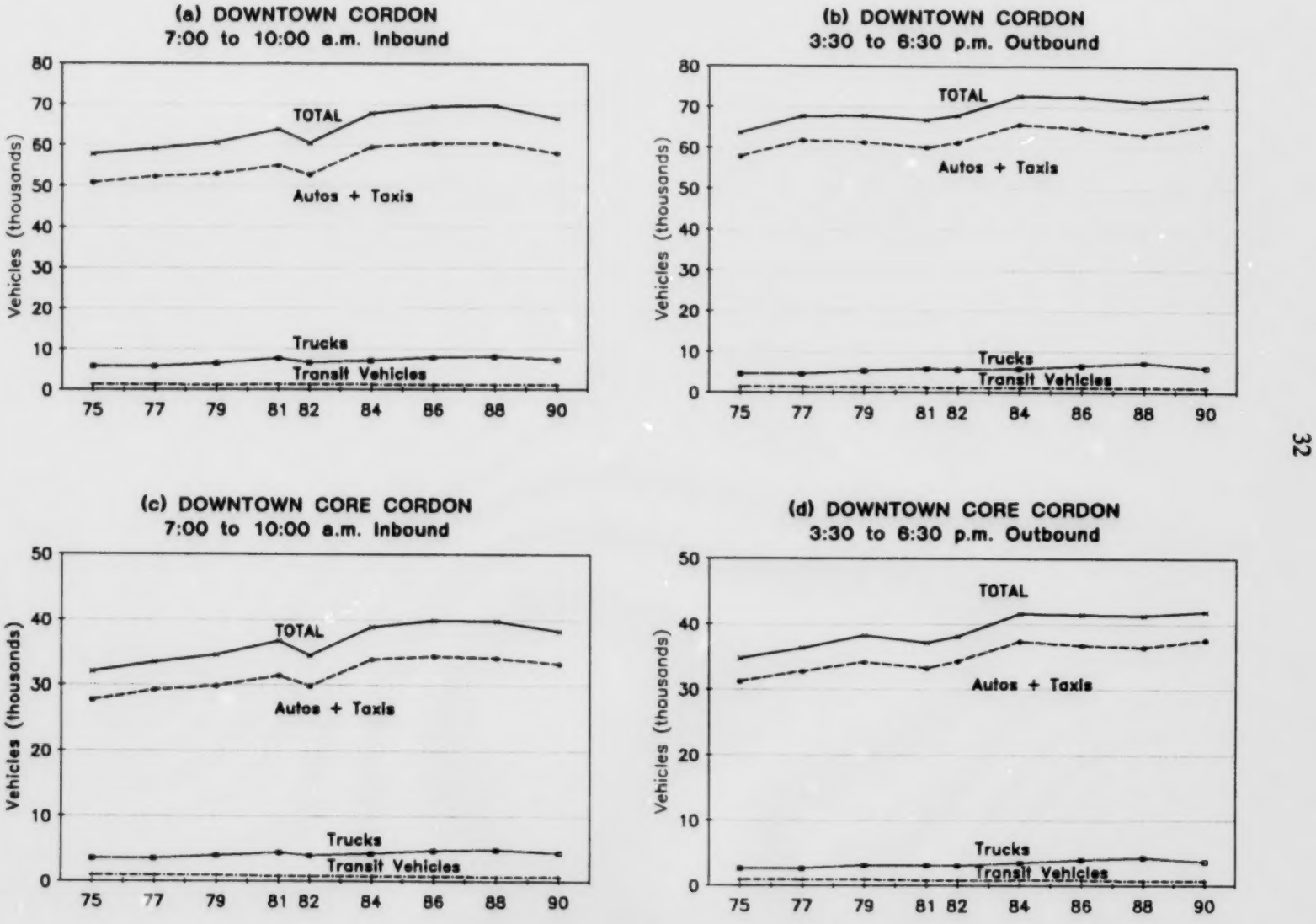
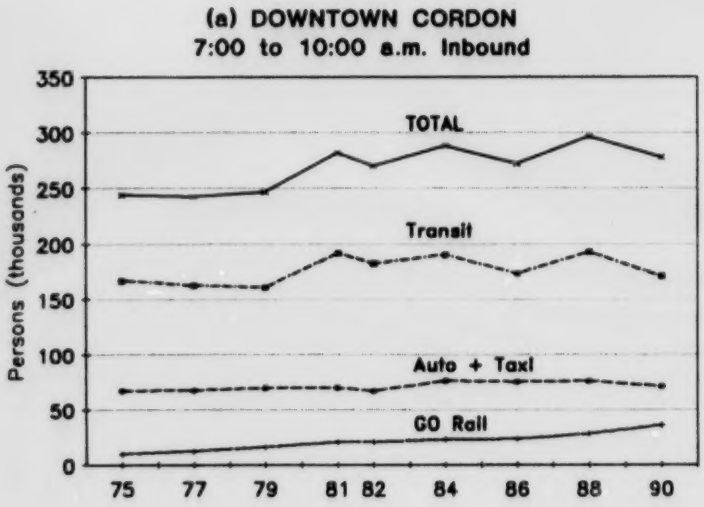
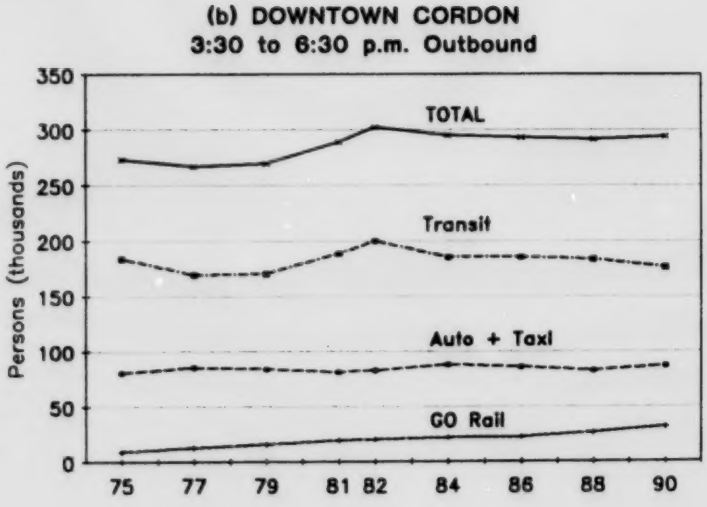
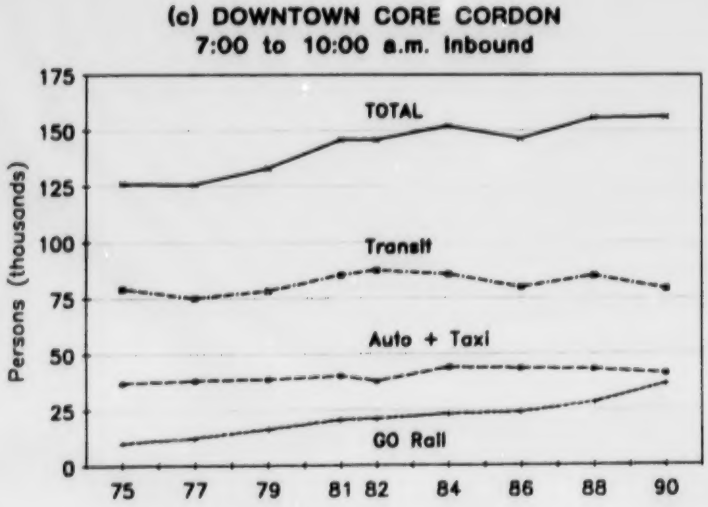
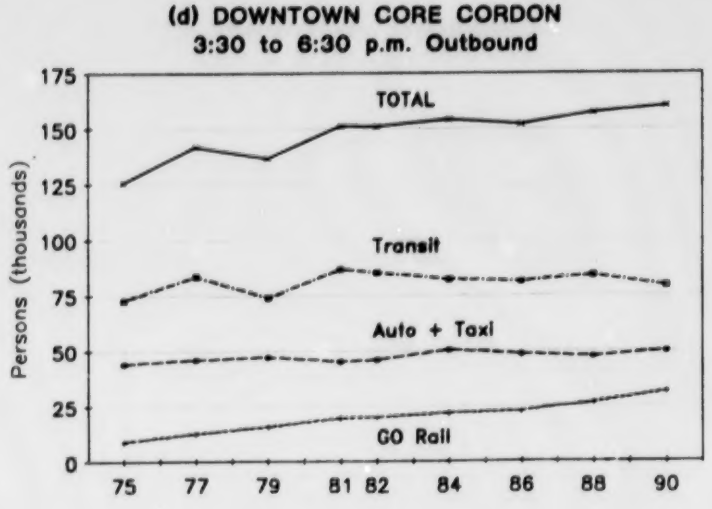


EXHIBIT 15: PEAK PERIOD PERSONS CROSSING INNER CORDONS, 1975-1990









(a) Central Area Cordon

Generally, person and vehicle flows to and from the Central Area during the a.m. and p.m. peak periods on average weekdays show noticeable decreases in 1990. The total number of vehicles crossing the Central Area Cordon decreased by almost 5% during the 7:00-10:00 a.m. period in the inbound direction, and more than 10% during the 3:30-6:30 p.m. period in the outbound direction.

The percentage decreases in total person trips across the Central Area Cordon, however, were not exactly comparable with those for vehicles. The person trips decreased by about 2% to 3% in the morning peak period, inbound direction and just above 9% in the afternoon peak period, outbound direction. These different percentage decreases in vehicle and person trips could occur as a result of higher auto occupancy rates and/or increase in transit modal split, possibly due to continued increases in GO Rail ridership.

(b) Inner Cordons

Despite significant decreases in peak period travel across the Central Area Cordon itself in 1990, the inner cordons did not experience decreases to the same extent, and generally person trips showed even slight increases across the boundaries of the inner cordons, mostly in the p.m. peak period.

Our analysis of data from the Metropolitan Employment Survey shows that the inner sections of the Central Area are where most of the employment decrease occurred between 1989 and 1990, (see Exhibits 7 and 8). It may therefore seem somewhat surprising that, although the peak period travel across the Central Area Cordon decreased significantly during the past year, which can be attributed partly to employment

decrease, a similar decrease in trips has not been experienced across the boundaries of the inner cordons, recording instead marginal increases.

A possible explanation for this situation is that the number of Central Area workers living within the fringes of the Central Area (where most of the Central Area population is concentrated) must have increased and more people kept crossing the inner cordons but not the Central Area Cordon itself. Even though some of these Central Area residents may not be working within the Central Area, the important thing is that they would no longer be crossing the Central Area Cordon during the peak periods in the peak direction, and some of them *may* still cross the boundaries of the inner cordons (even if they cross as "through" travellers).

This may also indicate that at least part of the decrease in trips across the Central Area Cordon during the past year was a result of more people living in the Central Area. Some of the decrease can of course be attributed to the decline in employment.

Since the 1990 population records are not yet available, it is not possible to see if the population changes between 1989 and 1990 can be somehow correlated to the changes in trips across the cordons. However, the changes in the Central Area population alone may not relate directly to the reduction in trips across the Central Area Cordon. Even without any net increase in the Central Area population it is still possible that commuter trips to and from various parts of the Central Area could be reduced because of increasing labour force participation of the Central Area population.

(ii) Auto Occupancy

As mentioned before, the actual number of persons was counted across the Central Area Cordon for the first time in an even year in 1990, even though it was not a full Cordon Count year.

The average auto occupancy trends across the Central Area and the Downtown Core Cordons are shown in Exhibit 16. The average auto occupancy for the Central Area Cordon did not change during the a.m. peak period, since 1987. It is possible that it has now stabilized at approximately 1.24 persons per vehicle. Also, the average occupancy across the Downtown Core Cordon appears to remain at a more or less stable level of 1.3 persons per vehicle, during the a.m. peak period in the inbound direction.

The average occupancy rates during the p.m. peak period in the outbound direction, however, have always been slightly higher compared to the a.m. peak period as a result of more non-work related trips. The auto occupancy across the Central Area Cordon during the p.m. peak period had climbed from 1.31 to 1.37 person per vehicle between 1987 and 1989, but it decreased back to the 1.30 level in 1990. On the other hand, the occupancy rate across the Central Core Cordon for the p.m. peak period showed an increase last year, after continuously declining since 1977. It increased to 1.41 persons per vehicle.

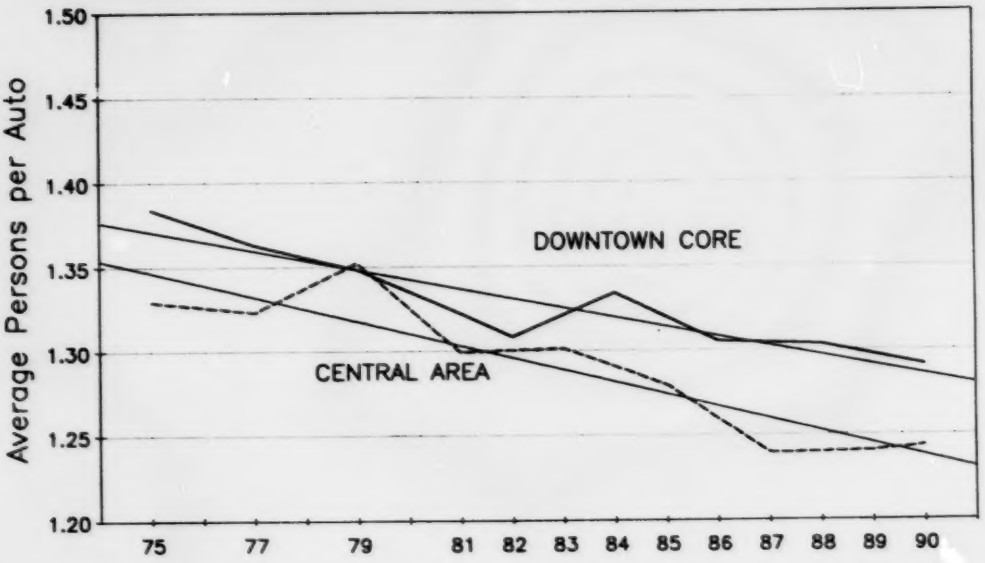
Since auto occupancy can be difficult to measure accurately, especially on a high volume expressway, the average occupancy rates may be subject to some estimation error.

(iii) Expressway Counts

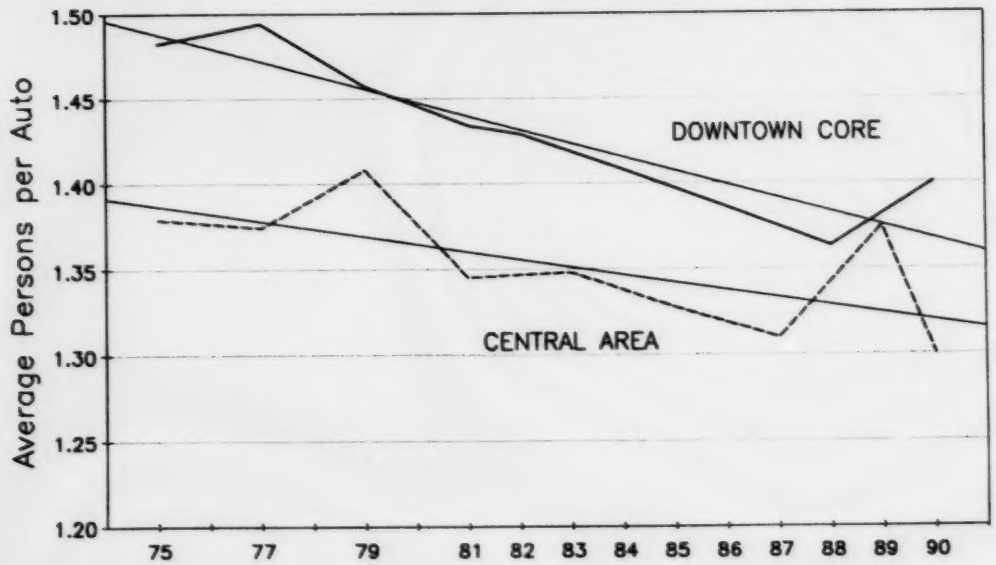
In the 1989 C.A.M.P. report, it was recommended that vehicular flows be monitored regularly at two expressway locations. The Gardiner Expressway

EXHIBIT 16: AUTO OCCUPANCY TRENDS AT CORDONS, 1975-1990

(a) A.M. Peak Period (7:00 to 10:00 a.m.) Inbound



(b) P.M. Peak Period (3:30 to 6:30 p.m.) Outbound



Source: Metro Cordon Count Program

at Bathurst Street and the Don Valley Parkway south of the Eglinton interchange were the two key points of interest since vehicle volumes at these locations are generally destined to the Central Area. Traffic volume statistics since 1975 are presented for these locations in Exhibit 17. Since there was no comprehensive Cordon Count last year, data could not be collected on the Don Valley Parkway south of Eglinton Avenue in 1990. The 1990 data for the Gardiner Expressway was obtained from the City of Toronto counts.

Similar to 1989, vehicular traffic was restricted to two lanes in the eastbound direction on the Gardiner Expressway at Bathurst Street. Before 1989, the construction was east of the Spadina Avenue exit ramp. Since then it has moved further west, effectively limiting the access to this exit ramp.

In the westbound direction, between 1988 and 1989 there was a significant increase in the volume of traffic crossing the Bathurst Street screenline. In 1990 however, a decrease of about 4,500 was observed between 6:30 a.m. and 11:30 p.m. The peak hour showed a decrease of 1,600 vehicles which is 20% less than in 1989. This may also be attributable to construction.

It must be kept in mind that data collected on traffic volumes at various stations are one-day counts and can be significantly affected by several factors. Since the Gardiner Expressway operates at or near capacity, minor disruptions to the traffic flow may cause fluctuating volumes on any particular day.

(iv) Peak Point Subway Counts

Peak point subway counts have been undertaken by the T.T.C. on a monthly basis until 1988 and a bi-monthly basis since 1989, with the exception of Wellesley Station which is counted once a month. These counts are conducted throughout the year, except for the summer months of June, July and August, and are averaged at the end of the year. Counting is done at the

EXHIBIT 17: TOTAL VEHICLE COUNTS AT SELECTED EXPRESSWAY LOCATIONS

(a) GARDINER EXPRESSWAY AT BATHURST STREET

Year	EASTBOUND			WESTBOUND		
	Maximum Hour	7:00 a.m.-10:00 a.m.	6:30 a.m.-11:30 p.m.	Maximum Hour	3:30 p.m.-6:30 p.m.	6:30 a.m.-11:30 p.m.
1975	5,212	14,537	55,641	6,043	15,190	55,796
1977	5,171	14,922	57,631	5,685	16,130	58,596
1979	5,201	14,825	53,914	6,845	18,901	69,962
1981	5,211	14,386	61,918	5,210	14,994	62,434
1983	5,935	16,650	66,624	5,898	16,182	62,609
1985	5,713	16,003	69,137	5,853	16,777	68,595
1987	5,247	14,525	68,456	5,622	13,357	70,559
1988	5,763	16,280	74,930	6,346	17,239	74,331
1989	4,367*	11,757*	56,534*	7,195	19,537	77,277
1990	4,874*	13,630*	65,234*	5,602	16,111	72,732

* Traffic flow restricted to 2 lanes due to construction in the eastbound direction

(b) DON VALLEY PARKWAY SOUTH OF EGLINTON AVENUE

Year	SOUTHBOUND			NORTHBOUND		
	Maximum Hour	6:30 a.m.-9:30 a.m.	6:30 a.m.-11:30 p.m.	Maximum Hour	3:30 p.m.-6:30 p.m.	6:30 a.m.-11:30 p.m.
1975	5,129	14,032	50,757	5,032	13,626	52,482
1977	5,120	14,325	56,838	4,756	13,832	54,449
1979	5,164	13,909	59,476	4,549	12,811	57,486
1981	4,866	13,685	56,877	5,457	14,588	55,687
1983	5,756	15,467	65,046	4,969	13,561	46,701
1985	5,257	14,469	51,790	5,043	14,334	60,587
1987	5,232	14,212	68,131	5,697	15,072	69,972
1988	N/A	N/A	N/A	N/A	N/A	N/A
1989	5,783	15,733	69,866	4,103	11,830	69,108
1990	N/A	N/A	N/A	N/A	N/A	N/A

Source: Metro Cordon Count Program

heaviest demand points on the subway system in order to estimate annual ridership trends. Information is presented for the a.m. peak hour rather than the p.m. since subway ridership is traditionally higher in the a.m. peak.

Since it has been already established that employment declined within the Central Area in 1990, it is therefore not surprising to report that the transit ridership has declined as well. As Exhibit 18 indicates, both the Yonge and University lines southbound, south of Bloor, have shown a decrease in the average number of riders, dropping 4.9% and 4.1% respectively since 1989.

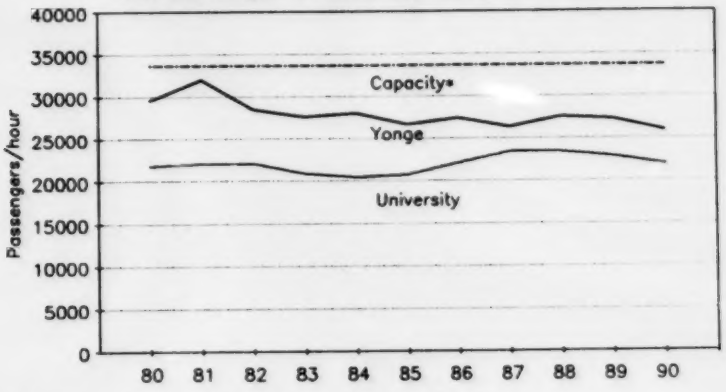
On the Yonge subway southbound north of Bloor, the trend of decreasing ridership since 1984 appears to continue with a decline of 5.4% over 1989. This brings total ridership even further from the previously assumed theoretical capacity level, based on the scheduled number of trains per hour. Although the Spadina line southbound north of Bloor appeared to be gaining ridership since 1983, the declining trend as evidenced since 1987, continues as well.

On the Bloor-Danforth subway, ridership westbound, east of Yonge Station continues to fluctuate. In 1990, the number of riders appears to have declined sharply from the peak of 1989, dropping 7.1% over 1989 figures. A corresponding reduction in the number of riders is also evident on the Bloor line eastbound, west of St. George Station, having declined 10.4%, which is the highest percentage peak point decrease recorded.

As in the past years, the most heavily loaded stations are on the Yonge line south of Bloor and on the Bloor line, travelling westbound, east of Yonge Station. Although it would appear that the existing system on all the lines are running under theoretical capacity, it must be remembered that these are one hour totals averaged over five or nine monthly counts. Variation in monthly,

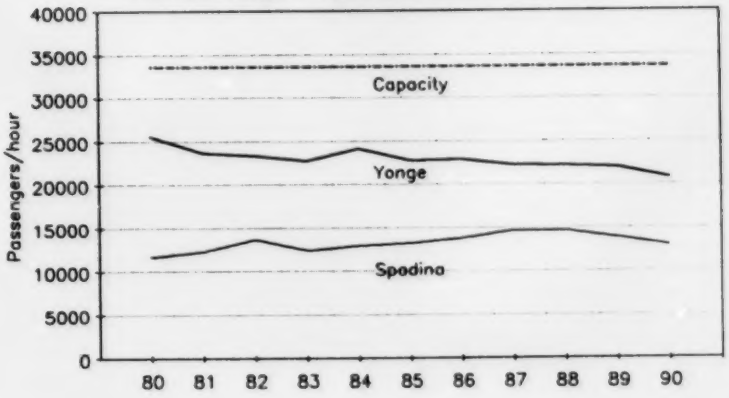
EXHIBIT 18: A.M. PEAK HOUR SUBWAY COUNTS, 1980-1990

(a) SB Yonge & University Lines S. of Bloor

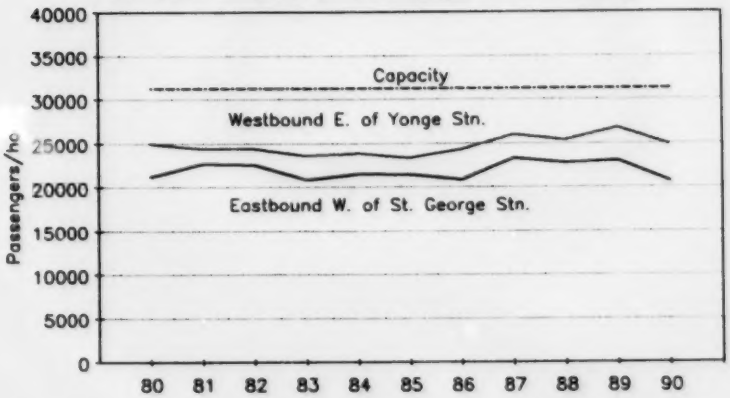


* Service based on theoretical capacity

(b) SB Yonge & Spadina Lines N. of Bloor



(c) Bloor Line W. of St. George & E. of Yonge



Source: T.T.C. (Avg. of monthly/bi-monthly counts excl. June, July, August)

daily and hourly travel demands create uneven loading conditions on the subway trains and cause irregularities in service. As a result, 15-minute ridership counts during the rush hours frequently exceed the loading standard capacity when expressed on an hourly basis. The T.T.C. suggests an operating capacity of 28,000 persons per hour per direction for the subway system.

(v) GO Transit

As new and often more affordable housing becomes available in the periphery of Metropolitan Toronto and beyond, it is not too surprising to find that ridership on the seven GO Transit lines has almost doubled in the past decade. More and more people live further away from the City of Toronto and commute to jobs in the Central Area.

To accommodate the increasing ridership demand, GO Transit added one extra train into Union Station during the a.m. peak period between May, 1989 and May, 1990 on three of the seven routes, namely Lakeshore East, Richmond Hill and Stouffville. The commuter lines focusing on the Central Area are shown in Exhibit 19.

The Lakeshore West line still carries the highest number of passengers with almost 14,000, followed by Lakeshore East with slightly over 9,000. Exhibit 20 provides graphical information illustrating the dramatic rise in GO Transit ridership since 1977. Since 1986, the number of riders has steadily increased reaching a level of over 36,000 in 1990.

In terms of individual lines, Richmond Hill had the highest percentage change in the number of total passengers between 7:00 and 10:00 a.m. with an increase of 46.2% over 1989 figures. Stouffville and Milton also experienced substantial percentage increases in ridership. The Lakeshore East route was the only line to experience a minor decrease in ridership, down 1.6% from

EXHIBIT 19: EXISTING GO TRAIN AND BUS SERVICES, (JUNE,1990)

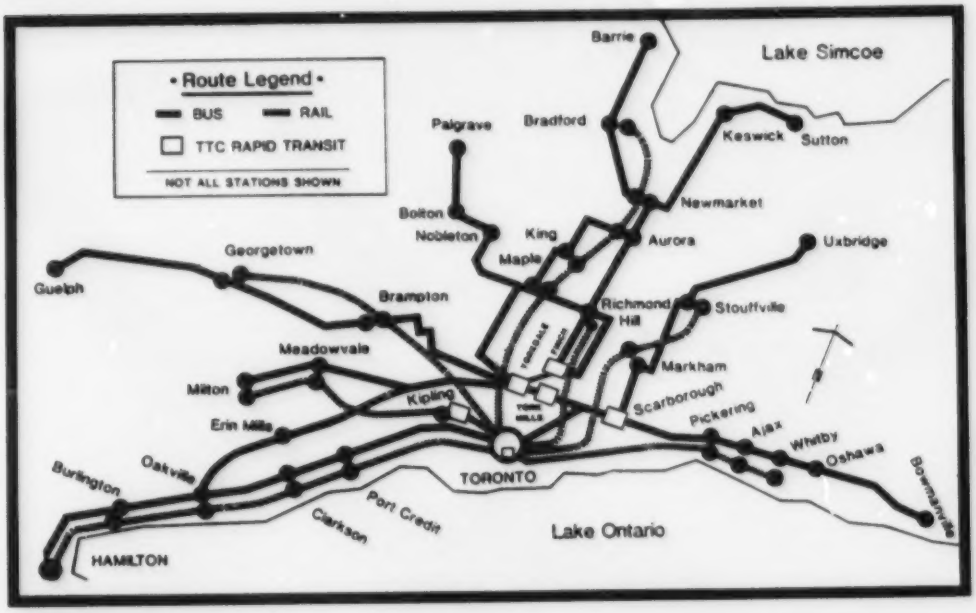
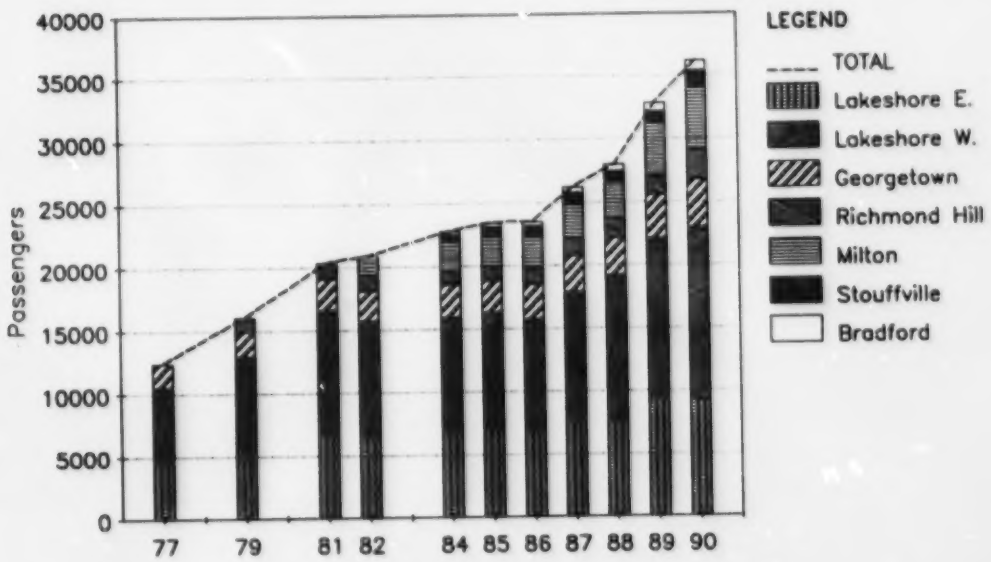


EXHIBIT 20: GO TRAIN PASSENGER ARRIVALS AT UNION STATION, 7:00-10:00 A.M.



Source: GO Transit data for Metro Cordon Count

1989 figures. Exhibit 21 summarizes the changes between 1989 and 1990 in the a.m. peak period ridership, as well as the service provided on each line.

Although total ridership grew by 10.1%, the total number of seats available on the seven lines increased by 26.5%, which in effect reduced the load factors. A reduction in load factor translates into less crowding, which was a major issue raised in last year's C.A.M.P. report. In 1989, three lines (Lakeshore West, Bradford and Stouffville) experienced load factors in excess of 90%. GO Transit managed to lower the average load factor substantially, from 86% in 1989 to 75% in 1990.

3.4.2 Off-Street Parking

The City of Toronto Department of Public Works and the Environment maintains an inventory of the number of available off-street parking spaces within the Central Area, by collecting data every two years since 1980. The survey area corresponds closely to the Central Area, excluding the northeast section (Rosedale) which is mostly residential. The study area was divided into a number of sub-areas for the purpose of this survey, one of which corresponds to the Downtown Core.

Exhibit 22 tabulates the number of non-residential off-street parking spaces available within the Central Area (excluding Rosedale) and the Downtown Core, every two years from 1980 to 1990. The variation of non-residential off-street parking spaces within these areas is graphically illustrated in Exhibit 23.

As can be seen from Exhibits 22 and 23, the number of spaces has generally increased compared to ten years ago, and during the past two years. The supply of parking, however, has not shown a steady increase between 1980 and 1990 but a fluctuating pattern during some years. This is probably because of elimination of some spaces due to construction on formerly vacant sites, which are later replaced by underground parking garages for the new commercial developments, and also due

EXHIBIT 21: A.M. PEAK HR. AND PEAK PERIOD GO TRAIN PASSENGER ARRIVALS AT UNION STATION, 1989 AND 1990

Line	(a) 7:00 - 9:00 A.M.							
	1989				1990			
	Trains	Seats	Passengers	% Load	Trains	Seats	Passengers	% Load
Lakeshore West	9	12,312	12,008	98%	9	15,552	12,795	82%
Lakeshore East	7	10,368	9,091	88%	8	13,284	8,932	67%
Georgetown	4	4,050	3,533	87%	4	4,536	3,898	86%
Richmond Hill	3	2,430	1,669	69%	4	3,888	2,440	63%
Milton	5	4,650	3,949	85%	5	5,832	4,838	83%
Bradford	1	810	74?	92%	1	972	846	87%
Stouffville	1	972	915	94%	2	1,458	1,276	88%
TOTAL	**30**	**35,592**	**31,908**	**90%**	**33**	**45,522**	**35,025**	**77%**

Line	(b) 7:00 - 10:00 A.M.							
	1989				1990			
	Trains	Seats	Passengers	% Load	Trains	Seats	Passengers	% Load
Lakeshore West	10	13,932	12,618	91%	10	17,172	13,611	79%
Lakeshore East	8	11,178	9,436	84%	9	14,256	9,289	65%
Georgetown	4	4,050	3,533	87%	4	4,536	3,898	86%
Richmond Hill	3	2,430	1,669	69%	4	3,888	2,440	63%
Milton	5	4,650	3,949	85%	5	5,832	4,838	83%
Bradford	1	810	743	92%	1	972	846	87%
Stouffville	1	972	915	94%	2	1,458	1,276	88%
TOTAL	**32**	**38,022**	**32,863**	**86%**	**35**	**48,114**	**36,198**	**75%**

Source: GO Transit data for Metro Cordon Count Program

to a change of parking standards in 1983 which reduced the parking requirement for new developments.

In general, the number of available off-street parking spaces (non-residential) within the Central Area has increased by about 11,050 or 13.2% between 1980 and 1990, and by more than 4,300 or 4.8% during the past two years. Within the Downtown Core area the corresponding increases were about 2,700 or 12.8% between 1980 and 1990, and 650 or 2.8% during the past two years.

3.4.3 Speed and Delay Study

The Speed and Delay Study was included in the Central Area Monitoring Program for the second time in 1990. This survey was first conducted in 1988 and results appeared in the 1989 C.A.M.P. report. The purpose of this study is to collect speed and delay information for all north/south and east/west arterial streets within the Central Area Cordon.

Information was assembled over the months of May and June with the aid of electronic Vehicle Installed Distance Devices (V.I.D.D.) mounted on specially equipped cars, which measured the elapsed time and distance travelled and recorded a series of codes entered by the operator at each intersection and for each delay. Data was collected for three time periods: the a.m. peak period (7:00 a.m.-9:00 a.m.), the off-peak or mid-day period (12:00 noon-2:00 p.m.), and the p.m. peak period (4:00 p.m.-6:00 p.m.). Additionally, information was collected on different days of the week to obtain average findings. This study was conducted before the Bay Street Urban Clearway project was introduced.

Exhibits 24 through 29 illustrate the results for each of the three time periods. As well, Exhibits A.11 and A.12 in the Appendix offer the findings in tabular form divided into east/west and north/south arterial roads.

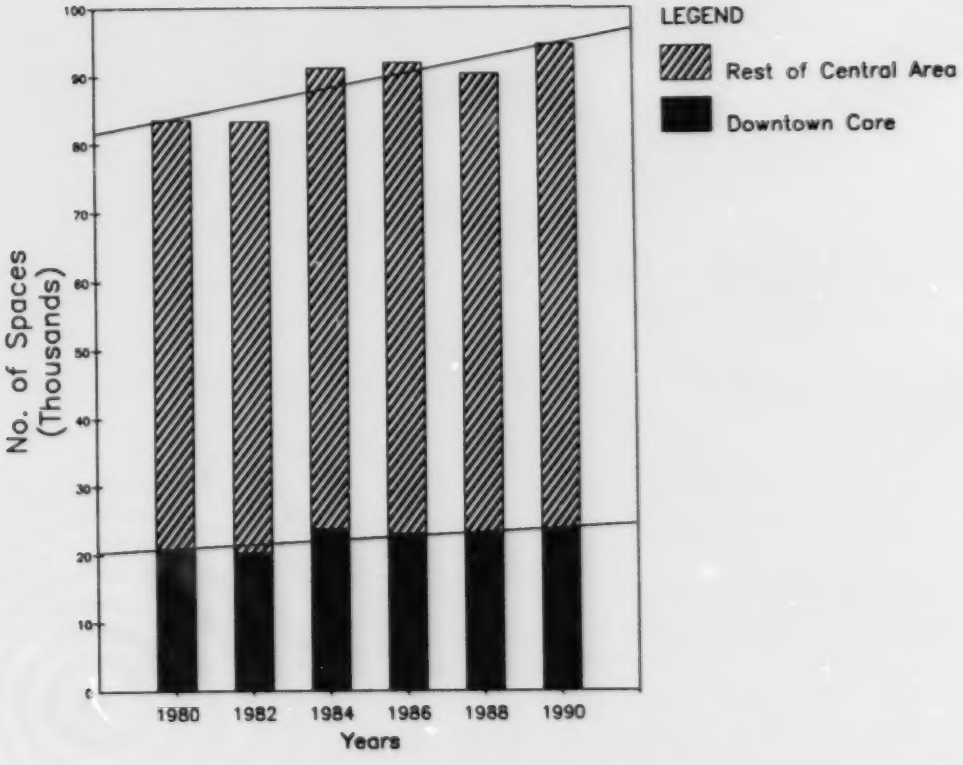
EXHIBIT 22: OFF-STREET NON-RESIDENTIAL PARKING INVENTORY

Years	1980	1982	1984	1986	1988	1990
Downtown Core	20,797	20,206	23,708	22,921	22,819	23,462
Central Area*	83,692	83,437	91,273	92,027	90,418	94,743

* Excluding Rosedale

Source: City of Toronto, Public Works Dept.

EXHIBIT 23: PARKING SPACES, 1980-1990 (NON-RESIDENTIAL)



(i) North/South Arterial Roads

A.M. Peak Period: As can be seen from Exhibit 24, the slowest streets (in black) are Bay and Yonge Streets in the southbound direction between King and Front Streets. Generally, Bay Street appears to be the slowest road. On University Avenue, multiple lanes, synchronized traffic signals and a 60 km/hr speed limit contribute to better traffic operation in both the north and south-bound directions. The centre reversible lane and synchronized signals on Jarvis Street in the southbound direction aid in moving traffic along with average speeds approaching 30 km/hr.

Off-Peak Period: Overall, it appears that traffic is slower on all north/south arterial roads between 12:00 and 2:00 p.m. than in the a.m. peak, with the exception of University Avenue northbound (see Exhibit 25). Bay and Yonge Streets, from Front Street to Davenport Road, are clearly the slowest streets to be travelling on as the speeds average between 14 and 16 km/hr. Bay Street northbound between Richmond and Queen Street remained a very slow section possibly due to the short distance between traffic signals. Motorists driving in the mid-day period will generally experience slower traffic for a variety of reasons, including parked cars and delivery vehicles, which are prohibited during rush periods on most arterial roads.

P.M. Peak Period: Between 4:00 and 6:00 p.m., traffic on the major north/south roads within the Central Area Cordon has some very slow sections, as illustrated in Exhibit 26.

Similar to the a.m. peak period, traffic on Bay Street southbound is moving at less than 10 km/hr. Spadina Avenue appears to be more congested in the p.m. peak period than in the morning as a combination of backlogged buses, angle parking and heavy pedestrian crowds appear to slow traffic down. Traffic from the northern section of the Central Area Cordon heading towards

EXHIBIT 24: AVERAGE AUTO TRAVEL SPEEDS NORTH/SOUTH ROUTES: A.M. PEAK

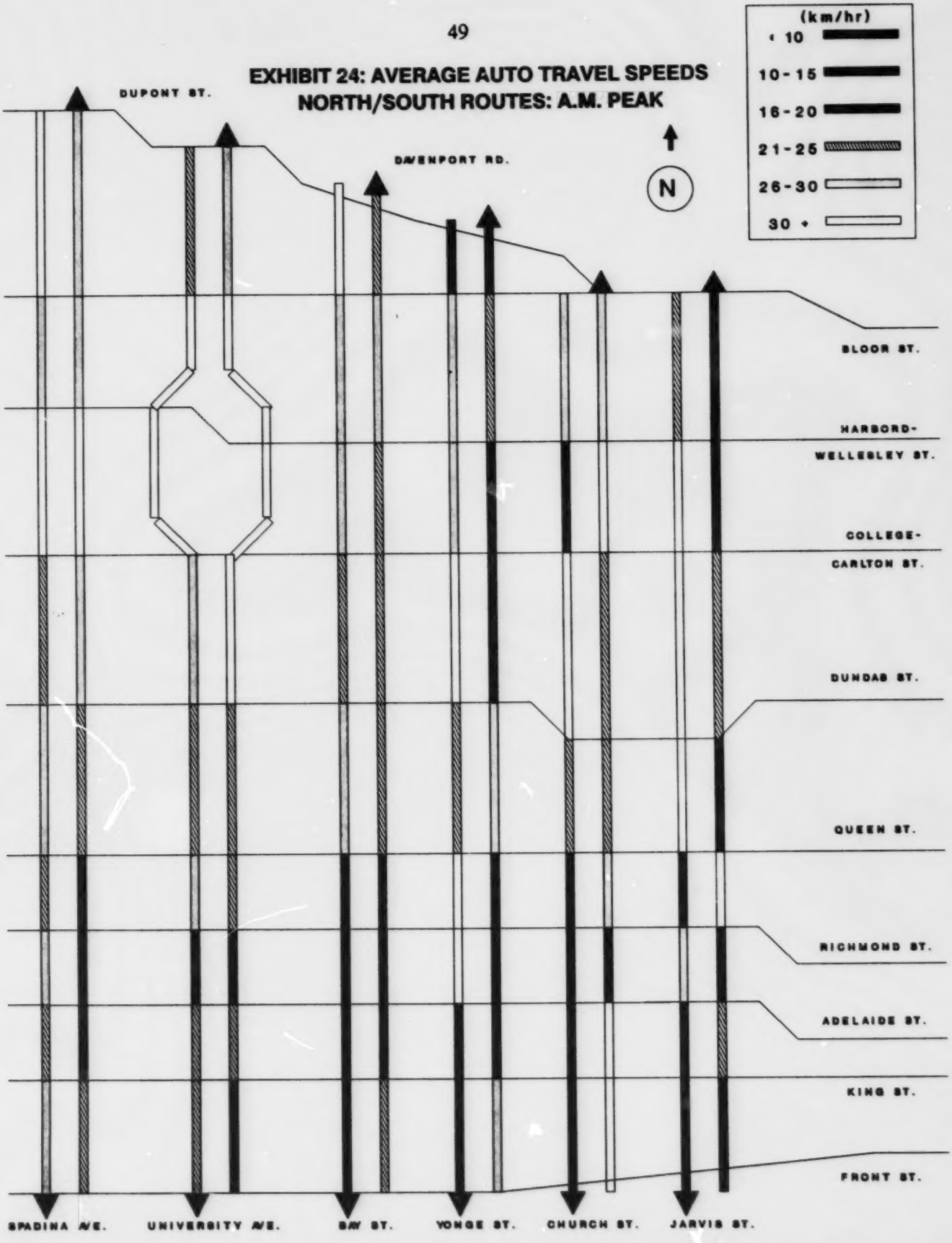


EXHIBIT 25: AVERAGE AUTO TRAVEL SPEEDS NORTH/SOUTH ROUTES: OFF-PEAK

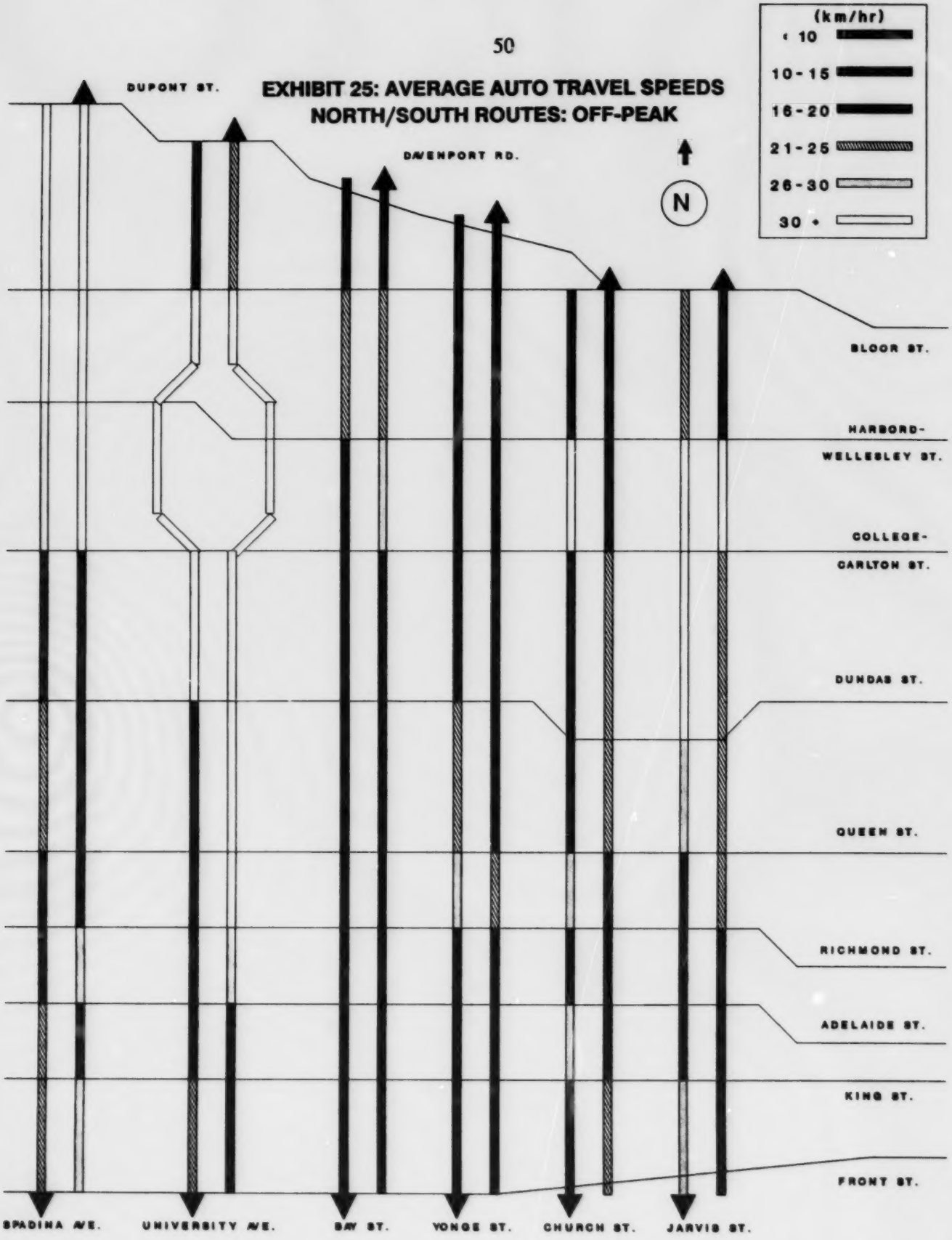


EXHIBIT 26: AVERAGE AUTO TRAVEL SPEEDS NORTH/SOUTH ROUTES: P.M. PEAK

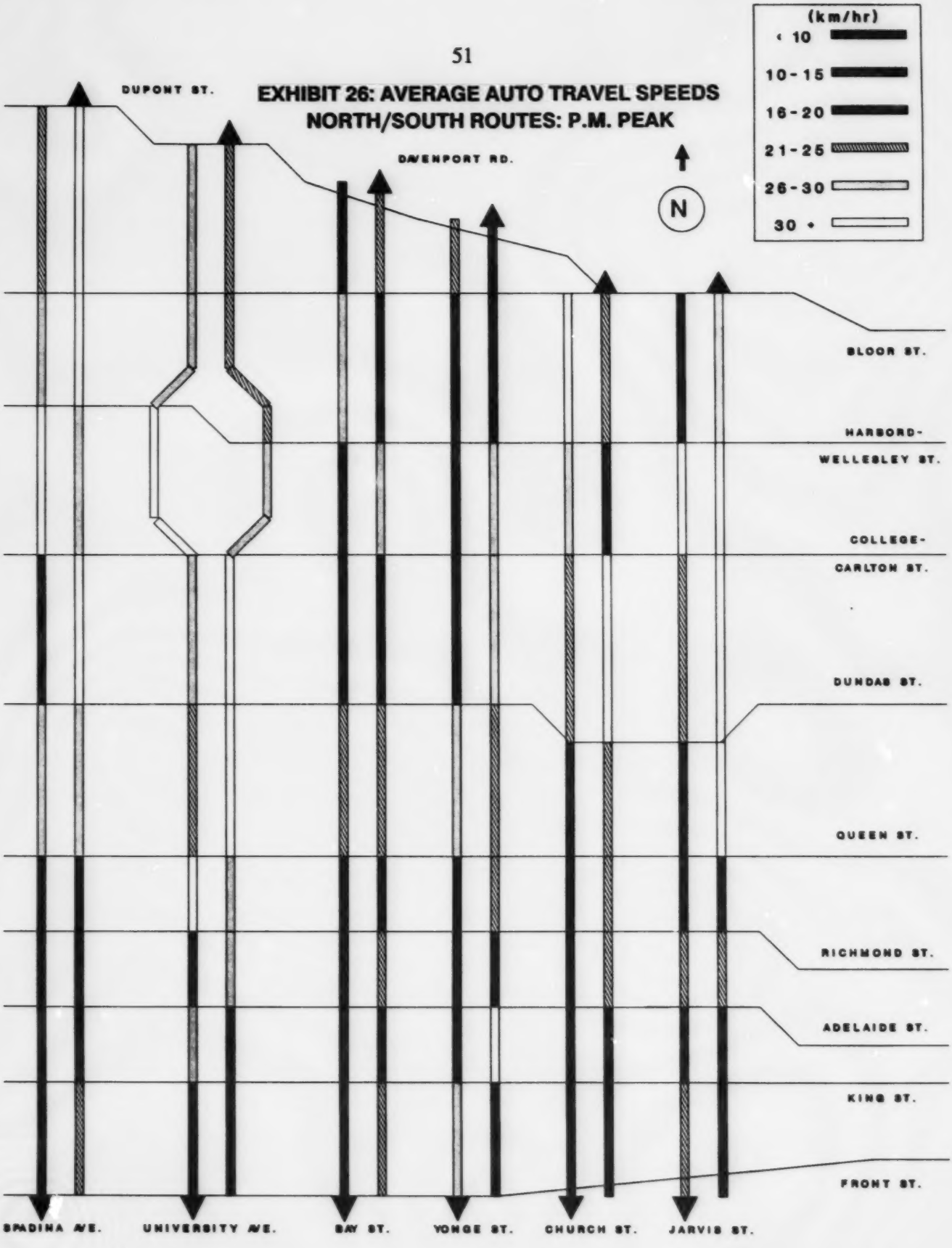


EXHIBIT 27: AVERAGE AUTO TRAVEL SPEEDS EAST/WEST ROUTES: A.M. PEAK

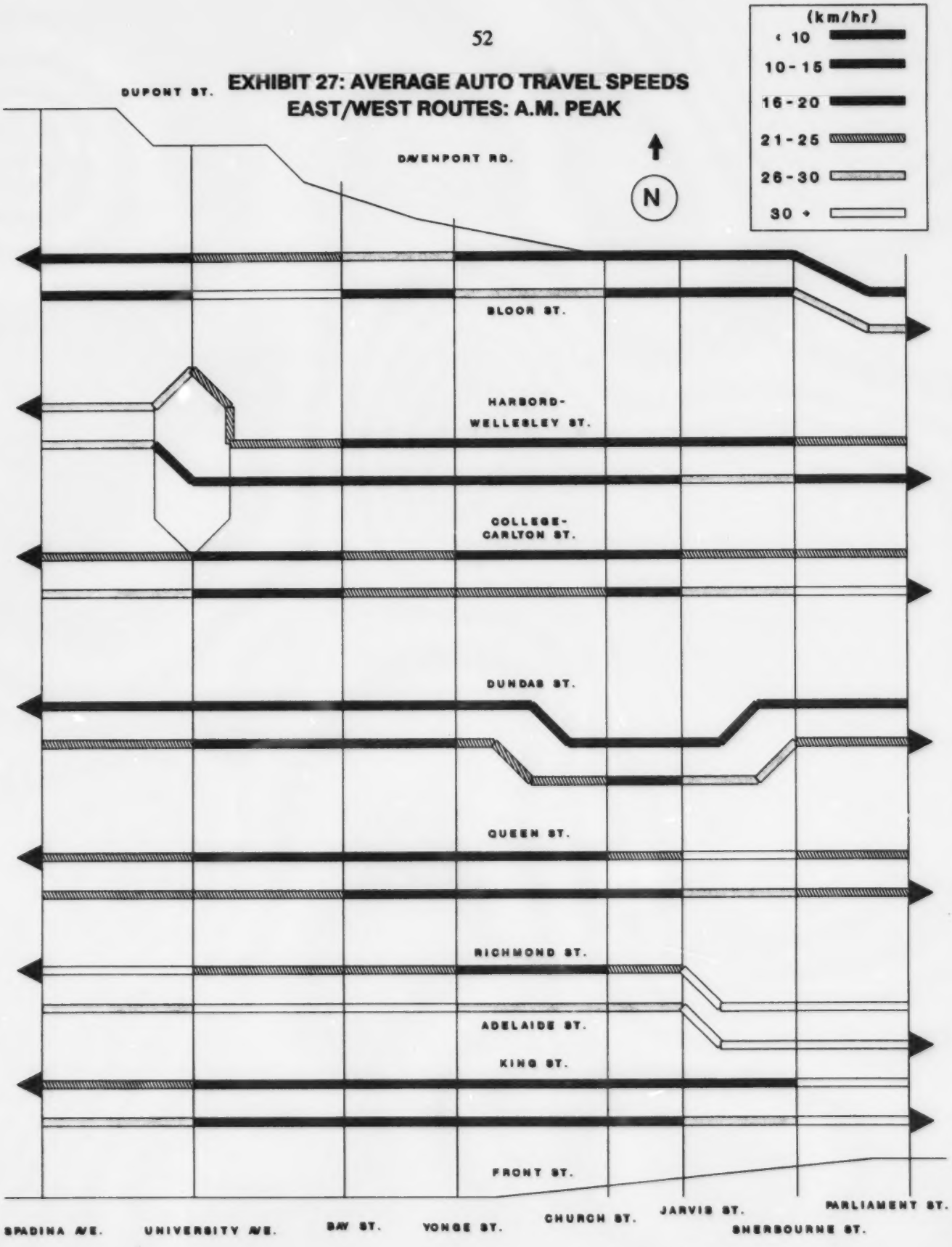


EXHIBIT 28: AVERAGE AUTO TRAVEL SPEEDS EAST/WEST ROUTES: OFF-PEAK

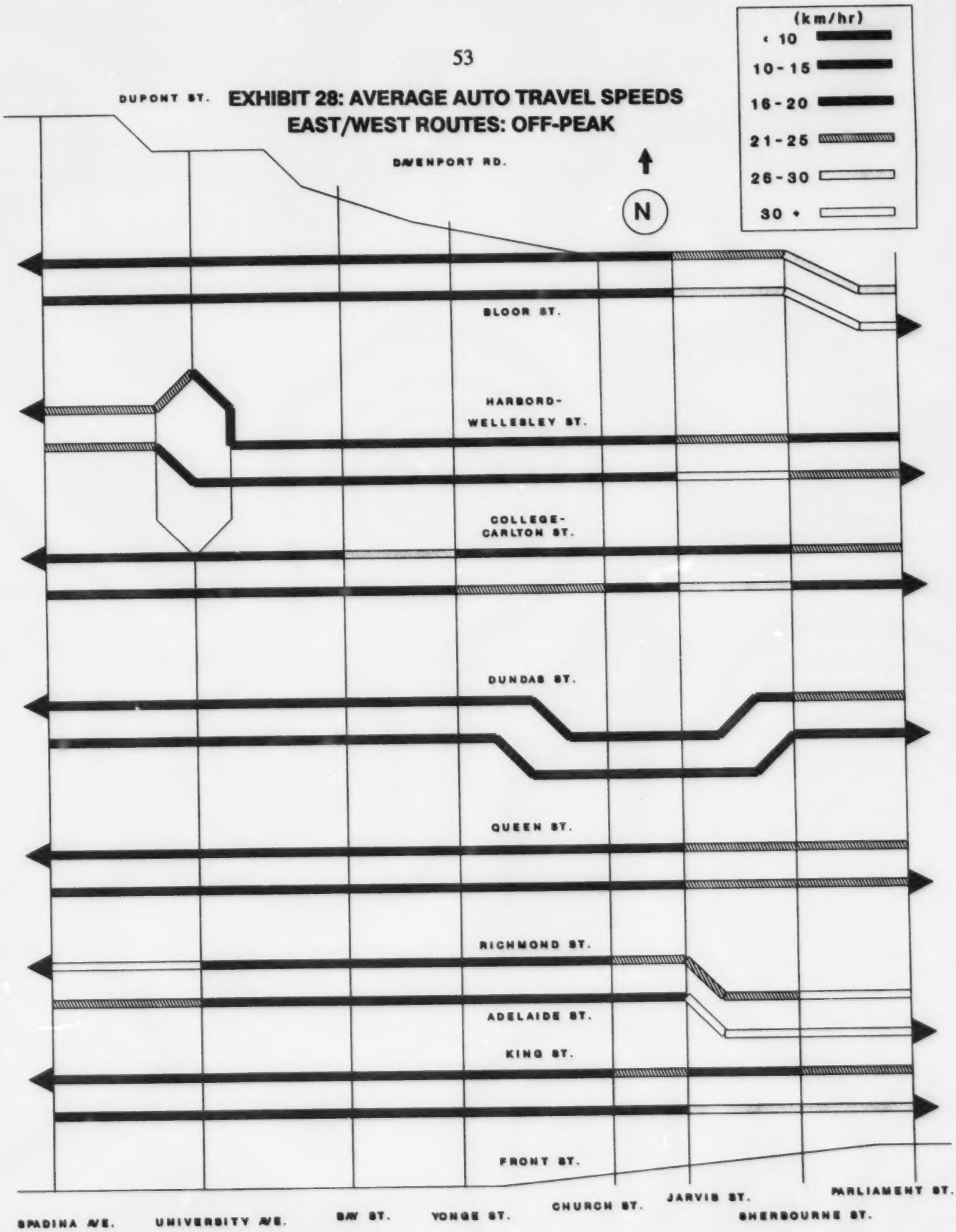
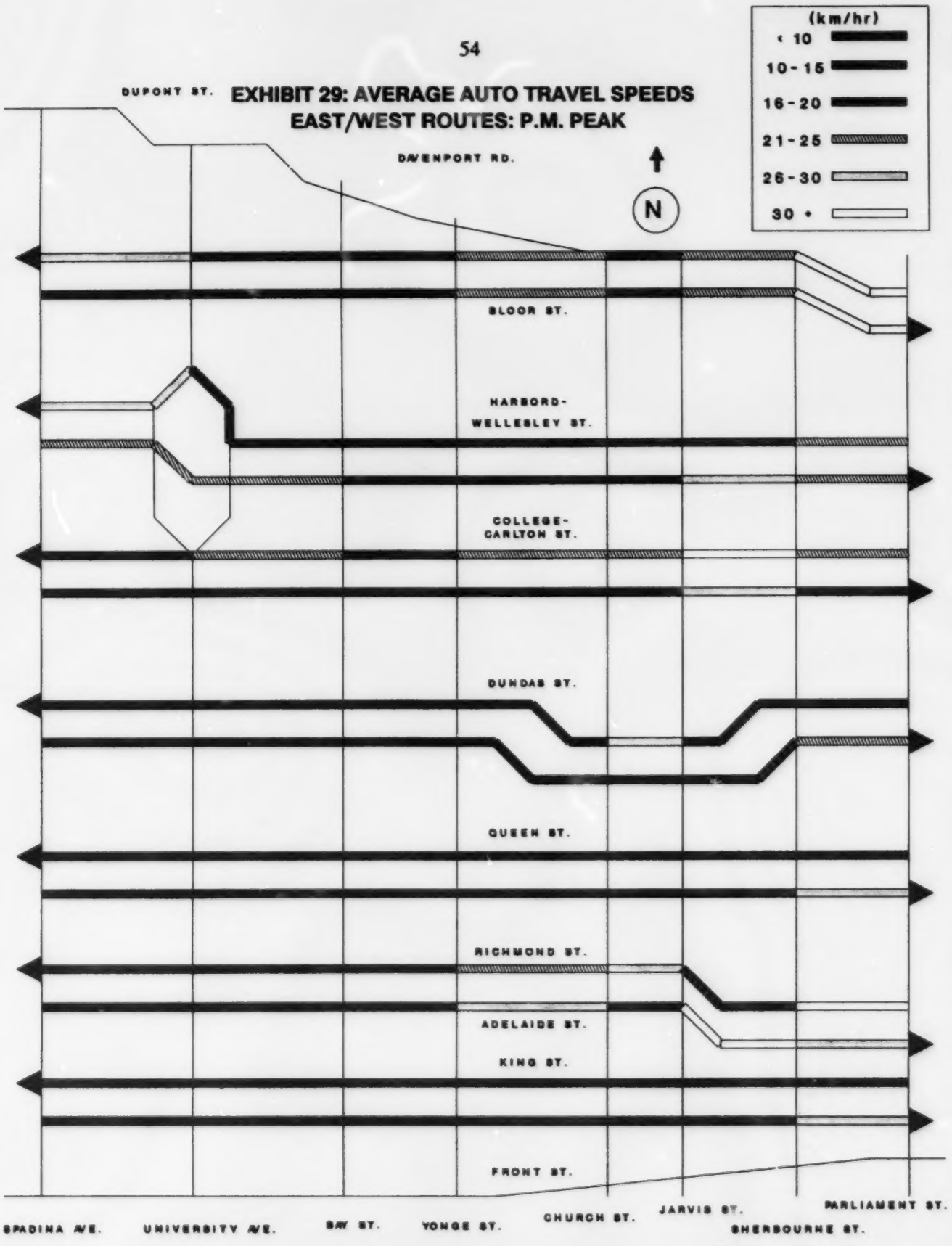


EXHIBIT 29: AVERAGE AUTO TRAVEL SPEEDS EAST/WEST ROUTES: P.M. PEAK



the Gardiner Expressway appears to make Bay and Yonge Streets two of the slowest streets. The reversible lane on Jarvis Street which operates northbound in the p.m. time period has an obvious positive effect as traffic moves at an average speed of over 30 km/hr from Queen Street to Wellesley Street.

(ii) East/West Arterial Roads

A.M. Peak Period: There are no exceptionally slow streets (traffic moving at less than 10 km/hr) between 7:00 and 10:00 a.m., although Dundas, Queen and King Streets are generally slower (Exhibit 27). In the financial district, the one-way pair of Richmond and Adelaide Streets provide a travel time advantage. Traffic moves the fastest along Adelaide Street with speeds averaging close to 30 km/hr on many sections.

Off-Peak Period: Between 12:00 and 2:00 p.m., there appear to be a number of road sections with traffic moving at less than 10 km/hr., as shown in Exhibit 28. The streets with notably slow traffic are Bloor Street westbound and Queen Street in both directions. Although east/west streets within the Central Area Cordon experience a variety of speeds, Dundas Street in both directions appears to have relatively slow traffic from Spadina Avenue all the way to Parliament Street. Again, the problems of lunch time pedestrian crowds, streetcars, on-street parking and deliveries combine to slow traffic down between 12:00 noon and 2:00 p.m..

P.M. Peak Period: In general, there are more slow sections on east/west streets within the Central Area Cordon between 4:00 and 6:00 p.m. than on north/south streets. Dundas Street remains a very busy route in both directions with some sections recording average speeds of under 10 km/hr 2(see Exhibit 29). The congestion observed on Dundas Street is also evident on Queen Street, as both routes share the common problem of slower traffic due in part to the presence of streetcars. Motorists do not appear to be as

advantaged by the one-way street system of Richmond and Adelaide Streets as observed in the a.m. peak period. The financial district proves to be one of the busiest areas between 4:00 and 6:00 p.m., especially when the large number of workers from the major office developments head toward expressway access points.

(iii) Summary

Exhibits A.11 and A.12 in the Appendix offer a detailed picture of the 1990 Speed and Delay Study, summarizing the average travel speed and average travel time for major arterial roads in the Central Area during the three time periods. It must be noted that, generally, the average travel speeds varied slightly (by 2 or 3 km/hr), leading to the conclusion that no one route appears to hold a major advantage over another in terms of higher travel speeds.

From the findings it would appear that, on average, travel speeds during the off-peak period (12:00 noon-2:00 p.m.) are the slowest, while in the a.m. peak period (7:00-10:00 a.m.) traffic moves relatively quickly. A number of factors contribute to moving traffic along smoothly, such as synchronized traffic signals and one-way streets. There are, however, other factors which hinder the smooth flow of traffic, such as on-street parking, deliveries and streetcars.

Just after the 1990 Speed and Delay Study was completed, the exclusive bus lanes on Bay Street were introduced. No information is available at this time to compare the before and after speeds.

(iv) Comparison of Speed and Delay Studies, 1988 and 1990

Since 1990 was only the second time that the Speed and Delay Study was conducted, it is difficult to make conclusive remarks based on detailed comparisons between the results of the 1988 and 1990 surveys for various road sections. It appears from the data collected that, in general, the average

speeds on both north/south and east/west arterials did not change appreciably between 1988 and 1990. The absolute changes in the average speeds along most arterials were in the order of 2 or 3 km/hr.

Among the north/south arterials across the Central Area, Jarvis Street showed the most significant increase in average travel speed. Between 1988 and 1990, the speed of traffic increased from 22 km/hr to 28 km/hr during the a.m. peak period in the southbound direction, and from 22 km/hr to about 30 km/hr during the p.m. peak period in the northbound direction. Because of the reversible centre lane operation, the speed differences between the peak and non-peak directions are quite noticeable along Jarvis Street.

In the east/west direction, the average travel speeds along Richmond and Adelaide one-way streets increased during the a.m. peak period, but decreased during the p.m. peak period.

As more data becomes available in the future, the significance of changes in travel speeds across the Central Area can be better assessed.

3.5 Development and Transportation Improvement Proposals

The current status of a number of proposed major office developments within the Central Area and transportation improvement proposals affecting the Central Area are summarized in this section.

3.5.1 Current Development Proposals

The major office developments under construction or in the process of approval are monitored on a monthly basis by the City of Toronto Planning and Development Department.

Exhibit 30 lists the major office developments (with over 18,000 sq.m. of office space) in the Central Area, which were either under construction or in various stages of the approval process as of the end of 1990. The office spaces shown in this Table are the new floor areas, excluding space retained from previously existing buildings. The additional office employment which could potentially be generated by these new office spaces in the Central Area has also been estimated assuming an average FSW ratio of 25.0 sq.m./employee and a vacancy rate of 6%.

Since the previous C.A.M.P. report, nearly 210,000 sq.m. of new office space has been completed in the Central Area to potentially accommodate almost 8,000 additional employees. The first phase of the B.C.E. development was one of the major projects completed during the past year. Also, during 1990, construction started on Metro Hall and the office component of the CBC project was approved by City Council.

As can be seen from Exhibit 30, close to 900,000 sq.m. of new office space were already under construction (or building permit issued), and an additional 300,000 sq.m. had been approved by City Council, as of December 31, 1990. In addition, over one million sq.m. of office space was at various stages of the approval process at the beginning of 1991. These totals do not include the majority of the Railway Lands, since development is still at the proposal stage with no formal application made to the City. (A rezoning application has been submitted in 1991 for Precinct B.) If these remaining Railway Lands developments are also approved and built, another half a million sq.m. of office space would be added to the Central Area.

As a result, about 2,700,000 sq.m. (29 million sq.ft.) of new office space within the Central Area is committed or at various stages of the approval process at the end of 1990. This total new space, when completed, could accommodate over 100,000 additional office employees. The net increase in the Central Area employment, however, would be less since some office employees would transfer from older

EXHIBIT 30: MAJOR DEVELOPMENTS UNDER CONSTRUCTION OR IN APPROVAL STAGES AS OF DECEMBER 31,1990

STAGE	DEVELOPMENT	Office Space (Sq.m.)	Estimated Employment (1)
Recently Completed (2)	1. B.C.E. PH1 (26 FRONT W.)	107,500	4,040
	2. WATERPARK PL PH2 (10 BAY)	30,100	1,130
	3. 665 BAY STREET	27,900	1,050
	4. 320 FRONT ST W	22,100	830
	5. 100 (90,94) YONGE ST.	21,100	795
	TOTAL	208,700	7,845
Under Construction and/or Building Permits Issued	6. BAY-ADELAIDE CTR (28 ADELAIDE W)	169,700	6,380
	7. METRO HALL (255 KING W)	121,900	4,585
	8. B.C.E. PH2 (26 FRONT W)	112,200	4,220
	9. EATON CTR PH1 (250 YONGE)	86,000	3,235
	10. YONGE-ADELAIDE PH 1&2 (1 ADELAIDE E)	55,000	2,070
	11. WORLD TRADE CTR PH2 (60 HARBOUR)	50,000	1,880
	12. TORONTO STOCK EXCHANGE (230 BAY)	46,400	1,760
	13. 444 YONGE ST	46,100	1,735
	14. CONFEDERATION SQ PH2 (1 QUEEN ST E)	38,000	1,440
	15. CONFEDERATION LIFE (100 HUNTLEY ST)	36,800	1,385
	16. YONGE-RICHMOND CTR (151 YONGE)	28,300	1,065
	17. 31 BLOOR ST E	27,200	1,025
	18. 434,444 UNIVERSITY AVE	26,400	995
	19. CROWN LIFE PH2 (227 BLOOR E)	25,600	965
	20. HONG KONG BANK (74 YORK ST/ 20 WELLINGTON W)	18,300	690
	TOTAL	887,900	33,430
Approved by City Council (Building Permit Application)	21. C.B.C. OFFICE COMPONENT (230 FRONT W)	169,800	6,385
	22. 188 UNIVERSITY AVE	51,000	1,920
	23. RICHMOND-ADELAIDE CTR (22 SHEPPARD ST)	38,100	1,435
	24. 250 WELLINGTON ST	23,800	895
	25. 21 CARLTON ST.	18,500	695
	TOTAL	301,200	11,330
Zoning- in- Place / Re-zoning Approved	26. PRECINCT A (STADIUM)	164,300	6,180
	27. EATON CTR PH2 (1 DUNDAS W)	138,600	5,210
	28. WORLD TRADE CTR PH3 (20 HARBOUR)	101,200	3,805
	29. PRECINCT 7 (CN EXPRESS)	42,700	1,605
	30. 43 (33) GERRARD ST W	32,500	1,220
	TOTAL	479,300	18,020
Approval Process	31. 40 BAY ST. (3)	120,800	4,540
	BLOCK 7 OF PCT 3 (3)	127,000	4,775
	BLOCK 4 OF PCT3 (3)	116,000	4,360
	32. 400 FRONT ST W	61,200	2,300
	33. 717-731 YONGE ST	36,200	1,360
	34. 185 YONGE ST	30,200	1,135
	35. 109-141 DUNDAS ST. W.	20,700	780
	36. 40 THE ESPLANADE	19,100	720
	TOTAL	531,200	19,970
Proposal/ No Application	37. REST OF RAILWAY LANDS (4)	497,900	18,720
	TOTAL	497,900	18,720
GRAND TOTAL		2,697,500	101,470

Source: City of Toronto, Planning and Development Department

(1) FSW ratio of 25.0 sq.m./employee and 6% vacancy rate assumed

(2) Not Included in Grand Total

(3) Subject to the passing of by-law to remove holding designation
Note: Rezoning application has been submitted in 1991 for Precinct B (Total of 447,900 sq.m.)

(4) Proposal for reduced development will be considered

buildings and employment in other sectors may continue to decline. Also, it is most likely that provision of more office space would result in higher vacancy rates at least in the short term. At the current average absorption rate, it would take about 20 years to occupy this amount of office space.

3.5.2 Current Transportation Improvement Proposals

In order to accommodate the existing and future transportation demand in Metropolitan Toronto, a number of road and transit improvement projects are currently being undertaken. The following is a summary of the current status of projects, which were listed in the previous C.A.M.P. report, as they relate to the Central Area:

(i) Road Proposals:

(a) Front Street Extension:

This project has been approved by the Ministry of the Environment (M.O.E.). However, Metropolitan Council has recently directed staff not to continue detailed design work until January, 1992, to allow the City of Toronto to conduct a further study of alternative alignments which would also provide for the opportunity to realign the northwest rail corridor in the area west of Strachan Avenue and provide new development space.

(b) Gardiner Expressway Widening:

The Humber River bridge will be reconstructed and widened. Bridge construction is expected to start in 1992 and take about 5 or 6 years. The ramps to the South Kingsway will be retained.

(c) Leslie Street Extension:

The environmental assessment document has been approved by Metro Council and is currently before the Ministry of the Environment. A joint

Environmental Assessment/Ontario Municipal Board hearing is expected to be scheduled following the release of the M.O.E. staff review.

(d) Traffic Management Systems:

As part of Metropolitan Transportation Department's "Short Term Strategy to Manage Transportation Congestion", sixteen projects affecting the Central Area have been initiated in 1990, and are presently ongoing.

(ii) Transit Proposals:

The Harbourfront L.R.T. opened on schedule in June 1990, extending from Union Station to Spadina Avenue; the Queens Quay Station opened in 1991. A feasibility study of easterly and westerly extensions of the line has recently been completed and an Environmental Assessment for a westerly extension from Spadina Avenue to Park Lawn Road has just been initiated as part of the Let's Move Program.

In October, 1990, the Bay Street Urban Clearway initiative commenced. The curb lanes of Bay Street are reserved exclusively for T.T.C. buses, taxis and bicycles from Front Street to Yorkville Avenue, between 7:00 a.m. and 7:00 p.m., Monday to Friday. Turning movements are also prohibited at many intersections.

(a) Spadina L.R.T.:

The Environmental Assessment for this proposal was approved by Metropolitan Council in August, 1990, and the report was submitted to the Ministry of the Environment in October, 1990. City of Toronto Council will be considering a staff report responding to the environmental assessment in the near future. The M.O.E. staff review of the Environmental Assessment Study is also expected later in 1991.

(b) Subway Improvements:

In the Fall of 1989, the first phase of the "Yonge-University-Spadina Increased Capacity and Improved Headway Project" was approved. Subway platform widening at Bloor Station is in progress in conjunction with construction of a commercial development by Bramalea Limited adjacent to the station. An option for a future third platform at Bloor Station has also been protected. A major upgrading of the signal system to increase line capacity is currently under study.

In April, 1990, the Ontario Minister of Transportation announced the Province's commitment to a $5 billion program for major rapid transit improvements in the Greater Toronto Area (GTA), known as the Let's Move Program. The program includes a subway loop connecting the Spadina and Yonge lines in the Finch or Steeles Avenue area, which would improve subway operation by allowing trains to operate independently in each direction and by eliminating delays due to turnback operations. In combination with the improvements listed above, the result would be higher frequency, more reliable and hence higher capacity subway service into the Central Area. The proposed easterly and westerly extensions of the Harbourfront L.R.T. would also increase transit capacity to the Central Area. The current Minister of Transportation has reaffirmed the Provincial Government's support for transit investment, including the entire Let's Move Program.

(c) GO Transit Improvements:

Following the announcement of the Let's Move Program by the Provincial Minister of Transportation, GO Transit initiated the "GO Transit Accelerated Planning" study. As part of this program, preliminary Physical Feasibility Studies have been undertaken for possible service expansions on the Richmond Hill, Stouffville, Georgetown and Barrie

lines in order to provide two-way all-day services on these lines, requiring the construction of additional tracks where necessary.

Also, Environmental Assessment studies are currently under way with regard to service expansion on the Milton line as well as the addition of a third track from Union Station to Eglinton Station on the Lakeshore East line and provision of a GO train storage and light maintenance facility at the C.N. Danforth Yard site.

(d) Fare Integration and Service Co-ordination Program:

Fare Integration and Service Co-ordination (FISC) initiatives have been undertaken in two phases. Phase I deals with fare integration and service co-ordination between T.T.C. services and GO Transit. The first initiative implemented was the TwinPass, a monthly pass which allows riders to take the T.T.C. and GO Rail with a savings of $20.00 over the combined price of buying separate monthly passes. Other Phase I initiatives have focused on improving co-ordination between T.T.C. feeder services and GO Rail at stations within Metropolitan Toronto. Phase II, which is currently under way, examines fare integration and service co-ordination between the T.T.C. and Mississauga Transit.

Additional phases of the FISC Program will address improved co-ordination between the T.T.C. and GO bus services and between the T.T.C. and municipal transit operators in the City of Vaughan and the Towns of Richmond Hill, Markham and Pickering.

4.0 PROPOSED IMPROVEMENTS TO C.A.M.P.

Ongoing Metro-wide surveys and data collection programs are expected to continue to provide most of the necessary information to be included in next year's C.A.M.P. report. The Speed and Delay Study is proposed to be repeated in 1992 for major arterial roads within the Central Area. However, a special survey is currently being scheduled to be carried out during the summer of 1991 along the Bay Street corridor only, for the purpose of assessing the impacts of the Bay Street Urban Clearway Project.

In order to be able to identify causal transportation relationships more accurately, the changing character of the Central Area population should be monitored regularly. Therefore, it is recommended that additional data be collected in future years about Central Area residents by conducting sample surveys similar to the 1989 Survey of Central Area Residents (C.A.R.S.).

It is also recommended that, for future C.A.M.P. reports, the following additional data be collected and analyzed:

- list of major residential development proposals (City of Toronto, Planning and Development Department);
- vehicle ownership trends for Central Area residents (M.T.O.);
- surface transit usage within the Central Area, and effects of the recently implemented improvements (T.T.C., Downtown Transit Plan);
- trip origins of GO Train riders to the Central Area, i.e. Metropolitan Toronto vs surrounding Regions (GO Transit);
- off-street parking costs and parking demand (City of Toronto, Department of Public Works and the Environment);

- the average travel times to the Central Area (the 1986 and 1991 Transportation Tomorrow Surveys); and
- environmental impacts of the increasing population and employment in the Central Area (Ministry of the Environment, monitoring stations).

APPENDIX

EXHIBIT A.1: EMPLOYMENT BY TYPE, FOUR CORDONS, 1983–1990

Years	FULL–TIME EMPLOYMENT							PART–TIME EMPLOYMENT							TOTAL EMPLOYMENT						
	OFFICE	MAN+W	INSTIT	RETAIL	SERVICE	OTHER	TOTAL	OFFICE	MAN+W	INSTIT	RETAIL	SERVICE	OTHER	TOTAL	OFFICE	MAN+W	INSTIT	RETAIL	SERVICE	OTHER	TOTAL
	(1) CENTRAL AREA CORDON							(1) CENTRAL AREA CORDON							(1) CENTRAL AREA CORDON						
1983	193,705	18,690	33,855	20,688	24,829	4,161	295,728	6,146	1,208	4,757	6,632	5,577	2,186	26,506	199,851	19,898	38,612	27,320	30,206	6,347	322,234
1984	201,574	18,022	34,330	18,411	24,771	4,932	302,040	6,894	1,274	5,465	7,804	6,882	2,612	30,931	208,468	19,296	39,795	26,215	31,653	7,544	332,971
1985	201,319	18,501	35,268	18,587	24,949	5,076	303,700	9,295	1,241	5,204	8,047	7,494	3,937	35,218	210,614	19,742	40,472	26,634	32,443	9,012	338,918
1986	207,343	16,876	37,183	18,607	26,575	4,894	311,278	12,056	1,634	7,647	9,176	8,566	4,426	43,507	219,401	18,510	44,830	27,783	35,141	9,120	354,785
1987	220,280	16,266	40,903	18,924	28,086	5,781	330,240	12,334	1,294	6,844	9,124	8,951	4,255	42,802	232,614	17,560	47,747	28,048	37,037	10,036	373,042
1988	223,480	13,155	41,702	18,406	26,189	6,026	328,958	15,090	1,517	8,688	10,058	9,404	4,144	48,901	238,570	14,672	50,390	28,464	35,593	10,170	377,859
1989	235,994	13,056	42,766	17,834	28,518	6,709	344,879	15,753	1,505	9,377	10,452	11,530	5,150	53,767	251,747	14,561	52,145	28,286	40,048	11,859	398,646
1990	228,805	11,175	43,866	17,986	26,873	7,465	336,170	19,328	1,606	8,926	10,064	11,848	5,058	56,830	248,133	12,781	52,792	28,050	38,721	12,523	393,000
	(2) DOWNTOWN CORE CORDON							(2) DOWNTOWN CORE CORDON							(2) DOWNTOWN CORE CORDON						
1983	93,337	895	2,855	8,115	7,662	1,275	114,139	2,458	56	560	4,024	2,088	281	9,467	95,795	951	3,415	12,139	9,750	1,556	123,606
1984	100,741	721	2,593	5,837	7,716	870	118,478	2,304	64	480	4,379	2,453	495	10,175	103,045	785	3,073	10,216	10,169	1,365	128,653
1985	97,573	949	2,036	5,892	7,412	1,158	114,820	3,212	83	916	4,307	2,808	754	12,080	100,785	1,032	2,952	9,999	10,220	1,912	126,900
1986	99,164	927	2,604	5,861	7,406	1,247	117,211	3,643	160	646	4,784	3,041	694	12,968	102,807	1,087	3,250	10,645	10,449	1,941	130,179
1987	104,377	872	2,624	5,707	7,403	1,286	122,269	4,339	52	403	4,777	3,654	446	13,671	108,716	924	3,027	10,484	11,057	1,732	135,940
1988	103,217	611	2,993	5,720	6,741	1,338	120,620	5,861	82	1,106	4,990	3,159	534	15,732	109,078	693	4,099	10,710	9,900	1,872	136,352
1989	109,079	673	3,027	5,189	7,035	1,150	126,153	4,664	50	904	5,124	3,277	541	14,560	113,743	723	3,931	10,313	10,312	1,691	140,713
1990	107,828	769	2,957	4,733	7,363	2,065	125,715	5,845	52	691	4,767	3,063	718	15,156	113,673	821	3,648	9,520	10,426	2,783	140,871
	(3) EXTENDED CORE CORDON							(3) EXTENDED CORE CORDON							(3) EXTENDED CORE CORDON						
1983	107,635	2,622	3,617	8,563	9,600	1,980	134,017	2,651	174	578	4,121	2,733	385	10,642	110,286	2,796	4,195	12,684	12,333	2,365	144,659
1984	116,129	2,336	3,469	6,565	10,131	1,723	140,353	2,688	180	533	4,585	3,196	607	11,791	118,817	2,516	4,002	11,150	13,329	2,330	152,144
1985	113,413	2,670	3,015	6,502	10,082	2,554	138,236	3,683	211	975	4,571	3,549	1,129	14,118	117,096	2,881	3,990	11,073	13,631	3,683	152,354
1986	114,976	2,363	3,611	6,532	10,117	2,212	139,811	4,890	293	734	5,158	3,914	1,107	16,096	119,866	2,656	4,345	11,690	14,031	3,319	155,907
1987	122,584	2,370	3,995	6,568	11,422	2,051	148,990	5,567	92	421	5,184	4,525	1,413	17,202	128,151	2,462	4,416	11,752	15,947	3,464	166,192
1988	124,234	1,623	4,450	6,548	10,222	3,179	150,256	7,190	134	1,178	5,504	4,105	1,096	19,207	131,424	1,757	5,628	12,052	14,327	4,275	169,463
1989	131,455	1,496	4,362	6,010	12,083	2,890	158,296	6,670	112	958	5,610	6,214	2,389	21,953	138,125	1,608	5,320	11,620	18,297	5,279	180,249
1990	128,385	1,451	4,607	5,561	11,956	4,226	156,188	8,129	86	752	5,361	6,080	2,844	23,252	136,514	1,537	5,359	10,922	18,036	7,070	179,440
	(4) DOWNTOWN CORDON							(4) DOWNTOWN CORDON							(4) DOWNTOWN CORDON						
1983	142,470	1,834	15,176	13,789	15,229	2,022	190,600	3,849	834	2,197	5,320	3,667	1,806	17,673	146,319	2,768	17,373	19,089	18,896	3,828	208,273
1984	150,559	1,566	14,550	10,812	15,348	2,294	195,129	4,356	854	2,242	6,242	4,551	2,067	20,312	154,915	2,420	16,792	17,054	19,899	4,361	215,441
1985	147,446	1,805	15,210	10,792	15,040	2,124	192,417	5,976	871	2,910	6,336	5,015	2,964	24,072	153,422	2,676	18,120	17,128	20,055	5,088	216,489
1986	152,864	1,872	16,896	11,147	15,454	2,002	200,235	7,660	1,000	3,733	7,094	5,593	3,198	28,278	160,524	2,872	20,629	18,241	21,047	5,200	228,513
1987	163,466	1,870	17,075	11,225	15,368	2,681	211,485	8,024	834	3,147	7,138	6,139	2,848	28,130	171,490	2,504	20,222	18,363	21,507	5,529	239,615
1988	160,494	1,541	18,086	10,843	14,644	2,211	207,819	9,308	1,058	4,923	7,696	5,931	3,005	31,921	169,802	2,599	23,009	18,339	20,575	5,216	239,540
1989	169,800	1,532	18,836	9,901	14,818	2,289	217,176	10,022	1,009	4,369	8,069	6,303	2,808	32,580	179,822	2,541	23,205	17,970	21,121	5,097	249,756
1990	165,464	1,478	19,105	9,774	14,809	3,017	213,647	11,096	1,000	3,841	7,268	6,120	2,131	31,456	176,560	2,478	22,946	17,042	20,929	5,148	245,103

EXHIBIT A.2: DWELLING UNITS BY TYPE, FOUR CORDONS, 1984–1989

Years	NO. OF DWELLING UNITS							NO. OF VACANT UNITS						
	DETCH.	SEMI	DPLEX	ROW/TH	APTS.	OTHER	TOTALS	DETCH.	SEMI	DPLEX	ROW/TH	APTS.	OTHER	TOTALS
	(1) CENTRAL AREA CORDON							(1) CENTRAL AREA CORDON						
1984	2,280	4,516	7,831	288	39,793	9,851	64,559	100	384	794	48	2,365	988	4,679
1985	2,277	4,563	7,775	292	40,847	10,253	66,007	89	386	898	29	1,905	1,130	4,437
1986	2,277	5,310	7,961	267	42,648	8,929	67,392	92	383	957	20	2,140	1,018	4,610
1987	2,316	5,410	7,583	0*	44,333	9,453	69,095	96	416	953	0*	2,288	1,111	4,864
1988	2,320	5,401	7,526	302	45,698	9,530	70,777	111	417	831	17	2,463	1,098	4,937
1989	2,331	5,417	7,514	383	49,044	9,333	74,022	133	467	857	36	4,225	1,146	6,864
% GROWTH (1984–89)	2.2%	20.0%	−4.0%	33.0%	23.2%	−5.3%	14.7%	33.0%	21.6%	7.9%	−25.0%	78.6%	16.0%	46.7%
	(2) DOWNTOWN CORE CORDON							(2) DOWNTOWN CORE CORDON						
1984	0	8	26	52	768	125	979	0	5	9	12	229	26	281
1985	0	6	26	52	843	144	1,071	0	3	10	5	139	41	198
1986	0	6	28	52	843	199	1,128	0	3	9	5	128	48	193
1987	0	4	30	0*	1,084	162	1,280	0	2	11	0*	234	39	286
1988	0	5	30	52	1,033	222	1,342	0	2	8	2	123	69	204
1989	0	7	25	52	1,236	162	1,482	0	5	7	3	241	40	296
% GROWTH (1984–89)	0.0%	−12.5%	−3.8%	0.0%	60.9%	29.6%	51.4%	0.0%	0.0%	−22.2%	−75.0%	5.2%	53.8%	5.3%
	(3) EXTENDED CORE CORDON							(3) EXTENDED CORE CORDON						
1984	251	12	26	52	2,073	188	2,602	12	8	9	12	421	45	507
1985	251	10	26	52	2,148	207	2,694	6	6	10	5	284	63	374
1986	251	10	28	52	2,823	250	3,414	7	6	9	5	425	65	517
1987	251	8	30	0*	3,214	270	3,773	8	5	11	0*	653	73	750
1988	251	9	30	52	3,667	328	4,337	6	5	8	2	574	106	701
1989	251	8	28	52	5,311	215	5,865	8	5	7	3	1,778	63	1,864
% GROWTH (1984–89)	0.0%	−33.3%	7.7%	0.0%	156.2%	14.4%	125.4%	−33.3%	−37.5%	−22.2%	−75.0%	322.3%	40.0%	267.7%
	(4) DOWNTOWN CORDON							(4) DOWNTOWN CORDON						
1984	51	294	269	86	11,767	3,234	15,701	8	38	49	15	1,115	211	1,436
1985	52	296	265	86	12,359	3,398	16,456	9	28	47	5	888	262	1,239
1986	52	287	265	89	13,012	2,811	16,516	5	29	54	6	757	228	1,079
1987	50	295	267	0*	14,279	2,683	17,574	6	30	63	0*	998	224	1,321
1988	51	294	270	122	14,815	2,742	18,294	6	37	41	7	1,080	274	1,445
1989	49	293	260	191	15,753	2,757	19,303	4	46	43	23	1,325	270	1,711
% GROWTH (1984–89)	−3.9%	−0.3%	−3.3%	122.1%	33.9%	−14.7%	22.9%	−50.0%	21.1%	−12.2%	53.3%	18.8%	28.0%	19.2%

* Row/townhouses were combined with apartments, in 1987

Source: HDB (Property File)

EXHIBIT A.5: VEHICLE TRIPS CROSSING DOWNTOWN CORE CORDON, 1975–1990

	07:00 A.M. – 10:00 A.M. Inbound							15:30 P.M. – 18:30 P.M. Outbound						
	Total Vehicles	Auto & Taxi		Trucks		Transit Veh.		Total Vehicles	Auto & Taxi		Trucks		Transit Veh.	
		No.	%	No.	%	No.	%		No.	%	No.	%	No.	%
West														
1975	6,644	5,483	82.5	895	13.5	266	4.0	11,521	10,316	89.5	815	7.1	390	3.4
1977	7,130	6,018	84.4	829	11.6	283	4.0	12,579	11,355	90.3	823	6.5	401	3.2
1979	7,173	5,941	82.8	960	13.4	272	3.8	13,038	11,680	89.6	966	7.4	392	3.0
1981	6,541	5,477	83.7	843	12.9	221	3.4	12,917	11,612	89.9	1,000	7.7	305	2.4
1982	6,764	5,638	83.4	918	13.6	208	3.1	12,842	11,559	90.0	980	7.6	303	2.4
1984	7,553	6,349	84.1	980	13.0	224	3.0	14,626	13,064	89.3	1,233	8.4	329	2.2
1986	8,549	7,318	85.6	1,036	12.1	197	2.3	14,183	12,569	88.6	1,306	9.2	308	2.2
1988	9,334	7,821	83.8	1,222	13.1	291	3.1	15,103	13,072	86.6	1,753	11.6	278	1.8
1990	8,426	7,223	85.7	978	11.6	225	2.7	15,541	13,854	89.1	1,398	9.0	289	1.9
North														
1975	6,053	5,106	84.4	764	12.6	183	3.0	7,230	6,601	91.3	487	6.7	142	2.0
1977	6,022	5,168	85.8	663	11.0	191	3.2	7,693	6,981	90.7	556	7.2	156	2.0
1979	6,486	5,409	83.4	860	13.3	217	3.3	8,439	7,622	90.3	675	8.0	142	1.7
1981	6,437	5,443	84.6	822	12.8	172	2.7	8,880	8,058	90.7	683	7.7	139	1.6
1982	6,332	5,327	84.1	844	13.3	161	2.5	8,546	7,783	91.1	627	7.3	136	1.6
1984	6,920	5,974	86.3	769	11.1	177	2.6	8,948	8,058	90.1	716	8.0	174	1.9
1986	7,111	5,960	83.8	963	13.5	188	2.6	9,379	8,327	88.8	894	9.5	158	1.7
1988	7,389	6,144	83.2	1,112	15.0	133	1.8	8,669	7,709	88.9	852	9.8	108	1.2
1990	7,087	5,997	84.6	929	13.1	161	2.3	8,237	7,400	89.8	704	8.5	133	1.6
East														
1975	11,416	10,004	87.6	1,156	10.1	256	2.2	11,057	9,941	89.9	844	7.6	272	2.5
1977	12,003	10,534	87.8	1,238	10.3	231	1.9	11,363	10,213	89.9	909	8.0	241	2.1
1979	12,825	11,277	87.9	1,329	10.4	219	1.7	11,785	10,496	89.1	1,054	8.9	235	2.0
1981	15,484	13,405	86.6	1,865	12.0	214	1.4	11,725	10,376	88.5	1,174	10.0	175	1.5
1982	12,921	11,375	88.0	1,348	10.4	198	1.5	12,206	10,959	89.8	1,020	8.4	227	1.9
1984	15,473	13,720	88.7	1,542	10.0	211	1.4	12,966	11,650	89.9	1,099	8.5	217	1.7
1986	14,034	12,192	86.9	1,643	11.7	199	1.4	13,148	11,718	89.1	1,219	9.3	211	1.6
1988	15,444	13,592	88.0	1,635	10.6	217	1.4	13,422	12,225	91.1	1,021	7.6	176	1.3
1990	14,016	12,403	88.5	1,437	10.3	176	1.3	14,293	12,907	90.3	1,195	8.4	191	1.3
South														
1975	7,936	7,094	89.4	671	8.5	171	2.2	4,921	4,316	87.7	485	9.9	120	2.4
1977	8,315	7,485	90.0	685	8.2	145	1.7	4,663	4,189	89.8	341	7.3	133	2.9
1979	8,090	7,197	89.0	737	9.1	156	1.9	4,893	4,369	89.3	410	8.4	114	2.3
1981	8,225	7,092	86.2	972	11.8	161	2.0	3,588	3,159	88.0	313	8.7	116	3.2
1982	8,469	7,471	88.2	841	9.9	157	1.9	4,466	3,974	89.0	402	9.0	90	2.0
1984	8,943	7,859	87.9	924	10.3	160	1.8	5,030	4,534	90.1	393	7.8	103	2.0
1986	10,167	8,961	88.1	1,094	10.8	112	1.1	4,670	4,060	86.9	525	11.2	85	1.8
1988	7,601	6,596	86.8	946	12.4	59	0.8	4,026	3,378	83.9	544	13.5	104	2.6
1990	8,754	7,671	87.6	971	11.1	112	1.3	3,785	3,374	89.1	303	8.0	108	2.9
Total														
1975	32,049	27,687	86.4	3,486	10.9	876	2.7	34,729	31,174	89.8	2,631	7.6	924	2.7
1977	33,470	29,205	87.3	3,415	10.2	850	2.5	36,298	32,738	90.2	2,629	7.2	931	2.6
1979	34,574	29,824	86.3	3,886	11.2	864	2.5	38,155	34,167	89.5	3,105	8.1	883	2.3
1981	36,687	31,417	85.6	4,502	12.3	768	2.1	37,110	33,205	89.5	3,170	8.5	735	2.0
1982	34,486	29,811	86.4	3,951	11.5	724	2.1	38,060	34,275	90.1	3,029	8.0	756	2.0
1984	38,889	33,902	87.2	4,215	10.8	772	2.0	41,570	37,306	89.7	3,441	8.3	823	2.0
1986	39,861	34,429	86.4	4,736	11.9	696	1.7	41,380	36,674	88.6	3,944	9.5	762	1.8
1988	39,768	34,153	85.9	4,915	12.4	700	1.8	41,220	36,384	88.3	4,170	10.1	666	1.6
1990	38,283	33,294	87.0	4,315	11.3	674	1.8	41,856	37,535	89.7	3,600	8.6	721	1.7

Source: Metro Cordon Count Program

EXHIBIT A.6: VEHICLES TRIPS CROSSING DOWNTOWN CORDON, 1975–1990

	07:00 A.M. – 10:00 A.M. Inbound							15:30 P.M. – 18:30 P.M. Outbound						
	Total Vehicles	Auto & Taxi		Trucks		Transit Veh.		Total Vehicles	Auto & Taxi		Trucks		Transit Veh.	
		No.	%	No.	%	No.	%		No.	%	No.	%	No.	%
West														
1975	19,741	16,872	85.5	2,319	11.7	550	2.8	28,028	25,422	90.7	1,959	7.0	647	2.3
1977	20,470	17,659	86.3	2,225	10.9	586	2.9	30,230	27,549	91.1	2,016	6.7	665	2.2
1979	20,168	17,068	84.6	2,538	12.6	562	2.8	29,823	26,845	90.0	2,334	7.8	644	2.2
1981	20,536	17,271	84.1	2,715	13.2	550	2.7	30,016	26,942	89.8	2,505	8.3	569	1.9
1982	20,080	17,041	84.9	2,531	12.6	508	2.5	29,684	26,655	89.9	2,437	8.2	572	1.9
1984	22,355	19,162	85.7	2,656	11.9	537	2.4	33,295	29,982	90.0	2,704	8.1	609	1.8
1986	24,278	20,803	85.7	2,949	12.1	526	2.2	32,637	29,123	89.2	2,946	9.0	568	1.7
1988	25,596	21,688	84.7	3,285	12.8	625	2.4	32,841	28,840	87.8	3,495	10.6	506	1.5
1990	24,279	21,013	86.5	2,689	11.1	577	2.4	34,990	31,411	89.8	3,031	8.7	548	1.6
North														
1975	5,476	5,038	92.0	416	7.6	22	0.4	6,214	5,845	94.1	334	5.4	35	0.6
1977	4,543	4,160	91.6	362	8.0	21	0.5	5,515	5,131	93.0	362	6.6	22	0.4
1979	5,294	4,775	90.2	503	9.5	16	0.3	6,431	5,979	93.0	433	6.7	19	0.3
1981	5,382	4,814	89.4	544	10.1	24	0.4	6,460	5,981	92.6	464	7.2	15	0.2
1982	5,682	5,181	91.2	483	8.5	18	0.3	6,699	6,224	92.9	456	6.8	19	0.3
1984	5,643	5,101	90.4	523	9.3	19	0.3	6,315	5,874	93.0	432	6.8	9	0.1
1986	5,944	5,338	89.8	596	10.0	10	0.2	6,904	6,256	90.6	626	9.1	22	0.3
1988	6,236	5,586	89.6	629	10.1	21	0.3	6,569	5,997	91.3	555	8.4	17	0.3
1990	5,370	4,725	88.0	600	11.2	45	0.8	5,901	5,507	93.3	373	6.3	21	0.4
East														
1975	24,575	21,851	88.9	2,288	9.3	436	1.8	24,443	22,235	91.0	1,746	7.1	462	1.9
1977	25,767	22,985	89.2	2,377	9.2	405	1.6	27,245	24,883	91.3	1,957	7.2	405	1.5
1979	27,079	24,000	88.6	2,691	9.9	388	1.4	26,671	24,105	90.4	2,151	8.1	415	1.6
1981	29,694	25,847	87.0	3,396	11.4	451	1.5	26,786	23,991	89.6	2,406	9.0	389	1.5
1982	26,254	23,063	87.8	2,742	10.4	449	1.7	27,081	24,393	90.1	2,260	8.3	428	1.6
1984	30,778	27,426	89.1	2,930	9.5	422	1.4	28,032	25,323	90.3	2,266	8.1	443	1.6
1986	29,013	25,375	87.5	3,215	11.1	423	1.5	28,309	25,412	89.8	2,486	8.8	411	1.5
1988	30,208	26,632	88.2	3,140	10.4	436	1.4	27,950	25,008	89.5	2,557	9.1	385	1.4
1990	28,120	24,660	87.7	3,065	10.9	395	1.4	28,240	25,465	90.2	2,374	8.4	401	1.4
South														
1975	7,936	7,094	89.4	671	8.5	171	2.2	4,921	4,316	87.7	485	9.9	120	2.4
1977	8,315	7,485	90.0	685	8.2	145	1.7	4,663	4,189	89.8	341	7.3	133	2.9
1979	8,090	7,197	89.0	737	9.1	156	1.9	4,893	4,369	89.3	410	8.4	114	2.3
1981	8,225	7,092	86.2	972	11.8	161	2.0	3,588	3,159	88.0	313	8.7	116	3.2
1982	8,469	7,471	88.2	841	9.9	157	1.9	4,466	3,974	89.0	402	9.0	90	2.0
1984	8,943	7,859	87.9	924	10.3	160	1.8	5,030	4,534	90.1	393	7.8	103	2.0
1986	10,167	8,961	88.1	1,094	10.8	112	1.1	4,670	4,060	86.9	525	11.2	85	1.8
1988	7,601	6,596	86.8	946	12.4	59	0.8	4,026	3,378	83.9	544	13.5	104	2.6
1990	8,754	7,671	87.6	971	11.1	112	1.3	3,785	3,374	89.1	303	8.0	108	2.9
Total														
1975	57,728	50,855	88.1	5,694	9.9	1,179	2.0	63,606	57,818	90.9	4,524	7.1	1,264	2.0
1977	59,095	52,289	88.5	5,649	9.6	1,157	2.0	67,653	61,752	91.3	4,676	6.9	1,225	1.8
1979	60,631	53,040	87.5	6,469	10.7	1,122	1.9	67,818	61,296	90.4	5,328	7.9	1,192	1.8
1981	63,837	55,024	86.2	7,627	11.9	1,186	1.9	66,850	60,073	89.9	5,688	8.5	1,089	1.6
1982	60,485	52,756	87.2	6,597	10.9	1,132	1.9	67,910	61,246	90.2	5,555	8.2	1,109	1.6
1984	67,719	59,548	87.9	7,033	10.4	1,138	1.7	72,672	65,713	90.4	5,795	8.0	1,164	1.6
1986	69,402	60,477	87.1	7,854	11.3	1,071	1.5	72,520	64,851	89.4	6,583	9.1	1,086	1.5
1988	69,643	60,502	86.9	8,000	11.5	1,141	1.6	71,386	63,223	88.6	7,151	10.0	1,012	1.4
1990	66,523	58,069	87.3	7,325	11.0	1,129	1.7	72,916	65,757	90.2	6,091	8.3	1,078	1.5

Source: Metro Cordon Count Program

EXHIBIT A.3: VEHICLE TRIPS CROSSING CENTRAL AREA CORDON, 1975–1990

	07:00 A.M. – 10:00 A.M. Inbound							15:30 P.M. – 18:30 P.M. Outbound						
	Total Vehicles	Auto & Taxi		Trucks		Transit Veh.		Total Vehicles	Auto & Taxi		Trucks		Transit Veh.	
		No.	%	No.	%	No.	%		No.	%	No.	%	No.	%
West														
1975	33,437	29,014	86.8	3,949	11.8	474	1.4	36,794	33,159	90.1	3,123	8.5	512	1.4
1977	35,023	30,294	86.5	4,259	12.2	470	1.3	37,385	33,572	89.8	3,307	8.8	506	1.4
1979	36,092	31,051	86.0	4,566	12.7	475	1.3	40,572	36,082	88.9	4,000	9.9	490	1.2
1981	35,503	30,248	85.2	4,780	13.5	475	1.3	35,594	31,295	87.9	3,806	10.7	493	1.4
1983	37,617	32,585	86.6	4,556	12.1	476	1.3	38,182	33,853	88.7	3,863	10.1	466	1.2
1985	39,557	34,145	86.3	4,948	12.5	464	1.2	40,099	35,315	88.1	4,322	10.8	462	1.2
1986*	41,914	36,620	87.4	4,826	11.5	468	1.1	39,341	34,726	88.3	4,167	10.6	448	1.1
1987*	41,029	34,791	84.8	5,781	14.1	457	1.1	42,086	36,164	85.9	5,496	13.1	426	1.0
1988*	41,779	34,919	83.6	6,334	15.2	526	1.3	44,446	39,259	88.3	4,712	10.6	475	1.1
1989*	40,309	34,114	84.6	5,687	14.1	508	1.3	48,107	41,810	86.9	5,783	12.0	514	1.1
1990*	39,811	34,615	86.9	4,701	11.8	495	1.2	40,486	35,163	86.9	4,823	11.9	500	1.2
North														
1975	18,417	17,168	93.2	1,141	6.2	108	0.6	20,566	19,368	94.2	1,064	5.2	134	0.7
1977	20,099	18,519	92.1	1,420	7.1	160	0.8	21,692	20,275	93.5	1,255	5.8	162	0.7
1979	19,745	17,907	90.7	1,706	8.6	132	0.7	21,467	19,774	92.1	1,575	7.3	118	0.5
1981	20,404	18,607	91.2	1,666	8.2	131	0.6	22,039	20,358	92.4	1,552	7.0	129	0.6
1983	19,801	18,088	91.3	1,587	8.0	126	0.6	21,929	20,257	92.4	1,566	7.1	106	0.5
1985	20,301	18,584	91.5	1,603	7.9	114	0.6	22,508	20,727	92.1	1,661	7.4	120	0.5
1986*	21,447	19,738	92.0	1,617	7.5	92	0.4	21,232	19,412	91.4	1,691	8.0	129	0.6
1987*	22,532	20,104	89.2	2,284	10.1	144	0.6	21,647	19,559	90.4	1,978	9.1	110	0.5
1988*	21,108	19,608	92.9	1,399	6.6	101	0.5	22,788	21,009	92.2	1,644	7.2	135	0.6
1989*	21,033	18,661	88.7	2,252	10.7	120	0.6	23,521	21,460	91.2	1,921	8.2	140	0.6
1990*	19,605	17,642	90.0	1,818	9.3	145	0.7	20,027	18,651	93.1	1,243	6.2	133	0.7
East														
1975	40,229	35,303	87.8	4,553	11.3	373	0.9	40,119	36,189	90.2	3,541	8.8	389	1.0
1977	40,719	35,744	87.8	4,616	11.3	359	0.9	40,233	35,751	88.9	4,109	10.2	373	0.9
1979	46,599	40,838	87.6	5,415	11.6	346	0.7	42,561	37,796	88.8	4,405	10.3	360	0.8
1981	42,743	36,861	86.2	5,440	12.7	442	1.0	42,575	37,768	88.7	4,422	10.4	385	0.9
1983	42,345	36,612	86.5	5,281	12.5	452	1.1	41,954	37,284	88.9	4,229	10.1	441	1.1
1985	42,896	36,977	86.2	5,496	12.8	423	1.0	44,018	38,783	88.1	4,825	11.0	410	0.9
1986*	47,029	41,570	88.4	5,018	10.7	441	0.9	41,702	37,045	88.8	4,199	10.1	458	1.1
1987*	47,090	40,468	85.9	6,226	13.2	396	0.8	45,232	39,224	86.7	5,601	12.4	407	0.9
1988*	48,917	43,216	88.3	5,249	10.7	452	0.9	45,742	40,282	88.1	5,128	11.2	332	0.7
1989*	46,597	38,876	83.4	7,310	15.7	411	0.9	42,297	37,002	87.5	4,852	11.5	443	1.0
1990*	43,244	37,683	87.1	5,131	11.9	430	1.0	41,295	36,018	87.2	4,902	11.9	375	0.9
Total														
1975	92,083	81,485	88.5	9,643	10.5	955	1.0	97,479	88,716	91.0	7,728	7.9	1,035	1.1
1977	95,841	84,557	88.2	10,295	10.7	989	1.0	99,310	89,598	90.2	8,671	8.7	1,041	1.0
1979	102,436	89,796	87.7	11,687	11.4	953	0.9	104,600	93,652	89.5	9,980	9.5	968	0.9
1981	98,650	85,716	86.9	11,886	12.0	1,048	1.1	100,208	89,421	89.2	9,780	9.8	1,007	1.0
1983	99,763	87,285	87.5	11,424	11.5	1,054	1.1	102,065	91,394	89.5	9,658	9.5	1,013	1.0
1985	102,754	89,706	87.3	12,047	11.7	1,001	1.0	106,625	94,825	88.9	10,808	10.1	992	0.9
1986*	110,390	97,928	88.7	11,461	10.4	1,001	0.9	102,275	91,183	89.2	10,057	9.8	1,035	1.0
1987*	110,651	95,363	86.2	14,291	12.9	997	0.9	108,965	94,947	87.1	13,075	12.0	943	0.9
1988*	111,804	97,743	87.4	12,982	11.6	1,079	1.0	112,976	100,550	89.0	11,484	10.2	942	0.8
1989*	107,939	91,651	84.9	15,249	14.1	1,039	1.0	113,925	100,272	88.0	12,556	11.0	1,097	1.0
1990*	102,660	89,940	87.6	11,650	11.3	1,070	1.0	101,808	89,832	88.2	10,968	10.8	1,008	1.0

* Includes new stations

Source: Metro Cordon Count Program

EXHIBIT A.4: VEHICLE TRIPS CROSSING EXTENDED CORE CORDON, 1985–1990

	07:00 A.M. – 10:00 A.M. Inbound							15:30 P.M. – 18:30 P.M. Outbound						
	Total Vehicles	Auto & Taxi		Trucks		Transit Veh.		Total Vehicles	Auto & Taxi		Trucks		Transit Veh.	
		No.	%	No.	%	No.	%		No.	%	No.	%	No.	%
West														
1985	35,385	30,673	86.7	4,422	12.5	290	0.8	36,844	32,647	88.6	3,904	10.6	293	0.8
1986	38,254	33,369	87.2	4,605	12.0	280	0.7	33,517	29,345	87.6	3,895	11.6	277	0.8
1987	32,767	27,864	85.0	4,616	14.1	287	0.9	36,871	32,059	86.9	4,506	12.2	306	0.8
1988	32,112	27,793	86.6	4,032	12.6	287	0.9	36,890	31,814	86.2	4,664	12.6	412	1.1
1989	31,744	26,897	84.7	4,491	14.1	356	1.1	41,121	35,918	87.3	4,811	11.7	392	1.0
1990	33,707	29,205	86.6	4,209	12.5	293	0.9	39,011	33,697	86.4	4,972	12.7	342	1.0
North														
1985	13,132	11,591	88.3	1,327	10.1	214	1.6	15,509	14,134	91.1	1,161	7.5	214	1.4
1986	13,410	11,715	87.4	1,482	11.1	213	1.6	16,981	15,338	90.3	1,439	8.5	204	1.2
1987	13,807	11,927	86.4	1,702	12.3	178	1.3	15,597	13,656	87.6	1,735	11.1	206	1.3
1988	13,699	12,014	87.7	1,540	11.2	145	1.1	16,469	14,855	90.2	1,444	8.8	170	1.0
1989	13,439	11,868	88.3	1,405	10.5	166	1.2	15,708	14,367	91.5	1,146	7.3	195	1.2
1990	13,324	11,670	87.6	1,463	11.0	191	1.4	15,639	14,152	90.5	1,266	8.1	221	1.4
East														
1985	25,583	21,861	85.5	3,448	13.5	274	1.1	29,589	25,815	87.2	3,500	11.8	274	0.9
1986	32,279	27,421	84.9	4,553	14.1	305	0.9	29,569	25,922	87.7	3,358	11.4	289	1.0
1987	32,953	28,071	85.2	4,557	13.8	325	1.0	27,786	23,806	85.7	3,734	13.4	246	0.9
1988	31,894	26,845	84.2	4,743	14.9	306	1.0	26,519	22,946	86.5	3,341	12.6	232	0.9
1989	30,269	25,362	83.8	4,604	15.2	303	1.0	26,970	23,501	87.1	3,185	11.8	284	1.1
1990	29,163	25,310	86.8	3,595	12.3	258	0.9	30,049	26,442	88.0	3,327	11.1	280	0.9
Total														
1985	74,100	64,125	86.5	9,197	12.4	778	1.0	81,942	72,596	88.6	8,565	10.5	781	1.0
1986	83,943	72,505	86.4	10,640	12.7	798	1.0	80,067	70,605	88.2	8,692	10.9	770	1.0
1987	79,527	67,862	85.3	10,875	13.7	790	1.0	80,254	69,521	86.6	9,975	12.4	758	0.9
1988	77,705	66,652	85.8	10,315	13.3	738	0.9	79,878	69,615	87.2	9,449	11.8	814	1.0
1989	75,452	64,127	85.0	10,500	13.9	825	1.1	83,799	73,786	88.1	9,142	10.9	871	1.0
1990	76,194	66,185	86.9	9,267	12.2	742	1.0	84,699	74,291	87.7	9,565	11.3	843	1.0

Source: Metro Cordon Count Program

EXHIBIT A.5: VEHICLE TRIPS CROSSING DOWNTOWN CORE CORDON, 1975–1990

	07:00 A.M. – 10:00 A.M. Inbound							15:30 P.M. – 18:30 P.M. Outbound						
	Total Vehicles	Auto & Taxi		Trucks		Transit Veh.		Total Vehicles	Auto & Taxi		Trucks		Transit Veh.	
		No.	%	No.	%	No.	%		No.	%	No.	%	No.	%
West														
1975	6,644	5,483	82.5	895	13.5	266	4.0	11,521	10,316	89.5	815	7.1	390	3.4
1977	7,130	6,018	84.4	829	11.6	283	4.0	12,579	11,355	90.3	823	6.5	401	3.2
1979	7,173	5,941	82.8	960	13.4	272	3.8	13,038	11,680	89.6	966	7.4	392	3.0
1981	6,541	5,477	83.7	843	12.9	221	3.4	12,917	11,612	89.9	1,000	7.7	305	2.4
1982	6,764	5,638	83.4	918	13.6	208	3.1	12,842	11,559	90.0	980	7.6	303	2.4
1984	7,553	6,349	84.1	980	13.0	224	3.0	14,626	13,064	89.3	1,233	8.4	329	2.2
1986	8,549	7,316	85.6	1,036	12.1	197	2.3	14,183	12,569	88.6	1,306	9.2	308	2.2
1988	9,334	7,821	83.8	1,222	13.1	291	3.1	15,103	13,072	86.6	1,753	11.6	278	1.8
1990	8,426	7,223	85.7	978	11.6	225	2.7	15,541	13,854	89.1	1,398	9.0	289	1.9
North														
1975	6,053	5,106	84.4	764	12.6	183	3.0	7,230	6,601	91.3	487	6.7	142	2.0
1977	6,022	5,168	85.8	663	11.0	191	3.2	7,693	6,981	90.7	556	7.2	156	2.0
1979	6,486	5,409	83.4	860	13.3	217	3.3	8,439	7,622	90.3	675	8.0	142	1.7
1981	6,437	5,443	84.6	822	12.8	172	2.7	8,880	8,058	90.7	683	7.7	139	1.6
1982	6,332	5,327	84.1	844	13.3	161	2.5	8,546	7,783	91.1	627	7.3	136	1.6
1984	6,920	5,974	86.3	769	11.1	177	2.6	8,948	8,058	90.1	716	8.0	174	1.9
1986	7,111	5,960	83.8	963	13.5	188	2.6	9,379	8,327	88.8	894	9.5	158	1.7
1988	7,389	6,144	83.2	1,112	15.0	133	1.8	8,669	7,709	88.9	852	9.8	108	1.2
1990	7,087	5,997	84.6	929	13.1	161	2.3	8,237	7,400	89.8	704	8.5	133	1.6
East														
1975	11,416	10,004	87.6	1,156	10.1	256	2.2	11,057	9,941	89.9	844	7.6	272	2.5
1977	12,003	10,534	87.8	1,238	10.3	231	1.9	11,363	10,213	89.9	909	8.0	241	2.1
1979	12,825	11,277	87.9	1,329	10.4	219	1.7	11,785	10,496	89.1	1,054	8.9	235	2.0
1981	15,484	13,405	86.6	1,865	12.0	214	1.4	11,725	10,376	88.5	1,174	10.0	175	1.5
1982	12,921	11,375	88.0	1,348	10.4	198	1.5	12,206	10,959	89.8	1,020	8.4	227	1.9
1984	15,473	13,720	88.7	1,542	10.0	211	1.4	12,966	11,650	89.9	1,099	8.5	217	1.7
1986	14,034	12,192	86.9	1,643	11.7	199	1.4	13,148	11,718	89.1	1,219	9.3	211	1.6
1988	15,444	13,592	88.0	1,635	10.6	217	1.4	13,422	12,225	91.1	1,021	7.6	176	1.3
1990	14,016	12,403	88.5	1,437	10.3	176	1.3	14,293	12,907	90.3	1,195	8.4	191	1.3
South														
1975	7,936	7,094	89.4	671	8.5	171	2.2	4,921	4,316	87.7	485	9.9	120	2.4
1977	8,315	7,485	90.0	685	8.2	145	1.7	4,663	4,189	89.8	341	7.3	133	2.9
1979	8,090	7,197	89.0	737	9.1	156	1.9	4,893	4,369	89.3	410	8.4	114	2.3
1981	8,225	7,092	86.2	972	11.8	161	2.0	3,588	3,159	88.0	313	8.7	116	3.2
1982	8,469	7,471	88.2	841	9.9	157	1.9	4,466	3,974	89.0	402	9.0	90	2.0
1984	8,943	7,859	87.9	924	10.3	160	1.8	5,030	4,534	90.1	393	7.8	103	2.0
1986	10,167	8,961	88.1	1,094	10.8	112	1.1	4,670	4,060	86.9	525	11.2	85	1.8
1988	7,601	6,596	86.8	946	12.4	59	0.8	4,026	3,378	83.9	544	13.5	104	2.6
1990	8,754	7,671	87.6	971	11.1	112	1.3	3,785	3,374	89.1	303	8.0	108	2.9
Total														
1975	32,049	27,687	86.4	3,486	10.9	876	2.7	34,729	31,174	89.8	2,631	7.6	924	2.7
1977	33,470	29,205	87.3	3,415	10.2	850	2.5	36,298	32,738	90.2	2,629	7.2	931	2.6
1979	34,574	29,824	86.3	3,886	11.2	864	2.5	38,155	34,167	89.5	3,105	8.1	883	2.3
1981	36,607	31,417	85.6	4,502	12.3	768	2.1	37,110	33,205	89.5	3,170	8.5	735	2.0
1982	34,486	29,811	86.4	3,951	11.5	724	2.1	38,060	34,275	90.1	3,029	8.0	756	2.0
1984	38,889	33,902	87.2	4,215	10.8	772	2.0	41,570	37,306	89.7	3,441	8.3	823	2.0
1986	39,861	34,429	86.4	4,736	11.9	696	1.7	41,380	36,674	88.6	3,944	9.5	762	1.8
1988	39,768	34,153	85.9	4,915	12.4	700	1.8	41,220	36,384	88.3	4,170	10.1	666	1.6
1990	38,283	33,294	87.0	4,315	11.3	674	1.8	41,856	37,535	89.7	3,600	8.6	721	1.7

Source: Metro Cordon Count Program

EXHIBIT A.6: VEHICLES TRIPS CROSSING DOWNTOWN CORDON, 1975–1990

	07:00 A.M. – 10:00 A.M. Inbound							15:30 P.M. – 18:30 P.M. Outbound						
	Total Vehicles	Auto & Taxi		Trucks		Transit Veh.		Total Vehicles	Auto & Taxi		Trucks		Transit Veh.	
		No.	%	No.	%	No.	%		No.	%	No.	%	No.	%
West														
1975	19,741	16,872	85.5	2,319	11.7	550	2.8	28,028	25,422	90.7	1,959	7.0	647	2.3
1977	20,470	17,659	86.3	2,225	10.9	586	2.9	30,230	27,549	91.1	2,016	6.7	665	2.2
1979	20,168	17,068	84.6	2,538	12.6	562	2.8	29,823	26,845	90.0	2,334	7.8	644	2.2
1981	20,536	17,271	84.1	2,715	13.2	550	2.7	30,016	26,942	89.8	2,505	8.3	569	1.9
1982	20,080	17,041	84.9	2,531	12.6	508	2.5	29,664	26,655	89.9	2,437	8.2	572	1.9
1984	22,355	19,162	85.7	2,656	11.9	537	2.4	33,295	29,982	90.0	2,704	8.1	609	1.8
1986	24,278	20,803	85.7	2,949	12.1	526	2.2	32,637	29,123	89.2	2,946	9.0	568	1.7
1988	25,598	21,688	84.7	3,285	12.8	625	2.4	32,841	28,840	87.8	3,495	10.6	506	1.5
1990	24,279	21,013	86.5	2,689	11.1	577	2.4	34,990	31,411	89.8	3,031	8.7	548	1.6
North														
1975	5,476	5,038	92.0	416	7.6	22	0.4	6,214	5,845	94.1	334	5.4	35	0.6
1977	4,543	4,160	91.6	362	8.0	21	0.5	5,515	5,131	93.0	362	6.6	22	0.4
1979	5,294	4,775	90.2	503	9.5	16	0.3	6,431	5,979	93.0	433	6.7	19	0.3
1981	5,382	4,814	89.4	544	10.1	24	0.4	6,460	5,981	92.6	464	7.2	15	0.2
1982	5,682	5,181	91.2	483	8.5	18	0.3	6,699	6,224	92.9	456	6.8	19	0.3
1984	5,643	5,101	90.4	523	9.3	19	0.3	6,315	5,874	93.0	432	6.8	9	0.1
1986	5,944	5,338	89.8	596	10.0	10	0.2	6,904	6,256	90.6	626	9.1	22	0.3
1988	6,236	5,586	89.6	629	10.1	21	0.3	6,569	5,997	91.3	555	8.4	17	0.3
1990	5,370	4,725	88.0	600	11.2	45	0.8	5,901	5,507	93.3	373	6.3	21	0.4
East														
1975	24,575	21,851	88.9	2,288	9.3	436	1.8	24,443	22,235	91.0	1,746	7.1	462	1.9
1977	25,767	22,985	89.2	2,377	9.2	405	1.6	27,245	24,883	91.3	1,957	7.2	405	1.5
1979	27,079	24,000	88.6	2,691	9.9	388	1.4	26,671	24,105	90.4	2,151	8.1	415	1.6
1981	29,694	25,847	87.0	3,396	11.4	451	1.5	26,786	23,991	89.6	2,406	9.0	389	1.5
1982	26,254	23,063	87.8	2,742	10.4	449	1.7	27,081	24,393	90.1	2,260	8.3	428	1.6
1984	30,778	27,426	89.1	2,930	9.5	422	1.4	28,032	25,323	90.3	2,266	8.1	443	1.6
1986	29,013	25,375	87.5	3,215	11.1	423	1.5	28,309	25,412	89.8	2,486	8.8	411	1.5
1988	30,206	26,632	88.2	3,140	10.4	436	1.4	27,950	25,008	89.5	2,557	9.1	385	1.4
1990	28,120	24,660	87.7	3,065	10.9	395	1.4	28,240	25,465	90.2	2,374	8.4	401	1.4
South														
1975	7,936	7,094	89.4	671	8.5	171	2.2	4,921	4,316	87.7	485	9.9	120	2.4
1977	8,315	7,485	90.0	685	8.2	145	1.7	4,663	4,189	89.8	341	7.3	133	2.9
1979	8,090	7,197	89.0	737	9.1	156	1.9	4,893	4,369	89.3	410	8.4	114	2.3
1981	8,225	7,092	86.2	972	11.8	161	2.0	3,588	3,159	88.0	313	8.7	116	3.2
1982	8,469	7,471	88.2	841	9.9	157	1.9	4,466	3,974	89.0	402	9.0	90	2.0
1984	8,943	7,859	87.9	924	10.3	160	1.8	5,030	4,534	90.1	393	7.8	103	2.0
1986	10,167	8,961	88.1	1,094	10.8	112	1.1	4,670	4,060	86.9	525	11.2	85	1.8
1988	7,601	6,596	86.8	946	12.4	59	0.8	4,026	3,378	83.9	544	13.5	104	2.6
1990	8,754	7,671	87.6	971	11.1	112	1.3	3,785	3,374	89.1	303	8.0	108	2.9
Total														
1975	57,728	50,855	88.1	5,694	9.9	1,179	2.0	63,606	57,818	90.9	4,524	7.1	1,264	2.0
1977	59,095	52,289	88.5	5,649	9.6	1,157	2.0	67,653	61,752	91.3	4,676	6.9	1,225	1.8
1979	60,631	53,040	87.5	6,469	10.7	1,122	1.9	67,818	61,298	90.4	5,328	7.9	1,192	1.8
1981	63,837	55,024	86.2	7,627	11.9	1,186	1.9	66,850	60,073	89.9	5,688	8.5	1,089	1.6
1982	60,485	52,756	87.2	6,597	10.9	1,132	1.9	67,910	61,246	90.2	5,555	8.2	1,109	1.6
1984	67,719	59,548	87.9	7,033	10.4	1,138	1.7	72,672	65,713	90.4	5,795	8.0	1,164	1.6
1986	69,402	60,477	87.1	7,854	11.3	1,071	1.5	72,520	64,951	89.4	6,583	9.1	1,086	1.5
1988	69,643	60,502	86.9	8,000	11.5	1,141	1.6	71,386	63,223	88.6	7,151	10.0	1,012	1.4
1990	66,523	58,069	87.3	7,325	11.0	1,129	1.7	72,916	65,757	90.2	6,081	8.3	1,078	1.5

Source: Metro Cordon Count Program

EXHIBIT A.7: PERSONS TRIPS CROSSING CENTRAL AREA CORDON, 1975–1990

	07:00 A.M. – 10:00 A.M. Inbound							15:30 P.M. – 18:30 P.M. Outbound						
	Total Persons	Auto & Taxi		Transit		GO Rail		Total Persons	Auto & Taxi		Transit		GO Rail	
		No.	%	No.	%	No.	%		No.	%	No.	%	No.	%
West														
1975	104,644	38,254	36.6	60,214	57.5	6,176	5.9	110,814	46,202	41.7	58,529	52.8	6,083	5.5
1977	106,938	39,535	37.0	59,603	55.7	7,800	7.3	117,172	46,563	39.7	62,316	53.2	8,293	7.1
1979	103,911	40,604	39.1	53,958	51.9	9,349	9.0	124,850	53,492	42.8	61,985	49.6	9,373	7.5
1981	108,140	38,578	35.7	57,339	53.0	12,223	11.3	116,068	41,695	35.9	62,440	53.8	11,933	10.3
1983	113,499	42,407	37.4	58,277	51.3	12,815	11.3	116,551	45,121	38.7	59,197	50.8	12,233	10.5
1985	113,135	42,954	38.0	55,480	49.0	14,701	13.0	113,252	46,253	40.8	53,172	47.0	13,827	12.2
1986*	114,534	46,516	40.6	53,439	46.7	14,579	12.7	114,577	45,474	39.7	55,303	48.3	13,800	12.0
1987*	115,156	42,704	37.1	56,007	48.6	16,445	14.3	120,110	47,274	39.4	57,018	47.5	15,818	13.2
1988*	119,980	42,861	35.7	59,284	49.4	17,835	14.9	124,648	51,319	41.2	56,905	45.7	16,424	13.2
1989*	119,804	42,395	35.4	56,566	47.2	20,843	17.4	140,834	59,623	42.3	61,647	43.8	19,564	13.9
1990*	115,462	42,959	37.2	49,310	42.7	23,193	20.1	116,389	45,961	39.5	49,784	42.8	20,644	17.7
North														
1975	64,292	22,033	34.3	42,259	65.7	0	0.0	71,742	25,900	36.1	45,842	63.9	0	0.0
1977	77,374	23,721	30.7	53,653	69.3	0	0.0	74,210	26,833	36.2	47,377	63.8	0	0.0
1979	75,982	22,766	30.0	53,216	70.0	0	0.0	86,628	26,246	30.3	60,382	69.7	0	0.0
1981	86,413	22,769	26.3	63,644	73.7	0	0.0	89,801	26,525	29.5	63,276	70.5	0	0.0
1983	85,790	22,616	26.4	63,174	73.6	0	0.0	93,032	27,153	29.2	65,879	70.8	0	0.0
1985	85,443	22,850	26.7	62,593	73.3	0	0.0	95,079	27,119	28.5	67,960	71.5	0	0.0
1986	92,698	24,474	26.4	68,224	73.6	0	0.0	90,635	25,414	28.0	65,221	72.0	0	0.0
1987	89,123	24,157	27.1	64,966	72.9	0	0.0	92,294	24,822	26.9	67,472	73.1	0	0.0
1988	93,163	23,561	25.3	69,602	74.7	0	0.0	96,765	26,662	27.6	70,103	72.4	0	0.0
1989	88,898	22,055	24.8	66,843	75.2	0	0.0	95,586	27,908	29.2	67,678	70.8	0	0.0
1990	84,411	21,279	25.2	63,132	74.8	0	0.0	85,830	22,647	26.4	63,183	73.6	0	0.0
East														
1975	99,187	46,850	47.2	48,431	48.8	3,906	3.9	105,166	48,735	46.3	53,114	50.5	3,317	3.2
1977	94,636	47,169	49.8	42,852	45.3	4,615	4.9	103,831	48,123	46.3	51,445	49.5	4,263	4.1
1979	107,617	56,645	52.6	44,202	41.1	6,770	6.3	103,521	51,045	49.3	45,979	44.4	6,497	6.3
1981	113,818	48,705	42.8	56,954	50.0	8,159	7.2	110,644	50,420	45.6	52,789	47.7	7,435	6.7
1983	107,152	47,294	44.1	51,915	48.4	7,943	7.4	110,124	49,321	44.8	53,710	48.8	7,093	6.4
1985	101,964	47,769	46.8	45,426	44.6	8,769	8.6	114,896	50,823	44.2	55,368	48.2	8,705	7.6
1986	117,038	51,984	44.4	56,107	47.9	8,947	7.6	111,020	51,268	46.2	51,181	46.1	8,571	7.7
1987	116,959	49,865	42.6	57,298	49.0	9,796	8.4	116,555	50,559	43.4	56,916	48.8	9,080	7.8
1988	120,913	53,251	44.0	57,476	47.5	10,186	8.4	120,666	51,923	43.0	59,043	48.9	9,700	8.0
1989	115,004	47,707	41.5	55,277	48.1	12,020	10.5	115,564	48,440	41.9	57,176	49.5	9,948	8.6
1990	115,964	45,906	39.6	57,053	49.2	13,005	11.2	117,306	46,271	39.4	58,286	49.7	12,749	10.9
Total														
1975	268,123	107,137	40.0	150,904	56.3	10,082	3.8	287,722	120,837	42.0	157,485	54.7	9,400	3.3
1977	278,948	110,425	39.6	156,108	56.0	12,415	4.5	295,213	121,519	41.2	161,138	54.6	12,556	4.3
1979	287,510	120,015	41.7	151,376	52.7	16,119	5.6	314,999	130,783	41.5	168,346	53.4	15,870	5.0
1981	308,371	110,052	35.7	177,937	57.7	20,382	6.6	316,513	118,640	37.5	178,505	56.4	19,368	6.1
1983	306,441	112,317	36.7	173,366	56.6	20,758	6.8	319,707	121,595	38.0	178,786	55.9	19,326	6.0
1985	300,542	113,573	37.8	163,499	54.4	23,470	7.8	323,227	124,195	38.4	176,500	54.6	22,532	7.0
1986*	324,270	122,974	37.9	177,770	54.8	23,526	7.3	316,232	122,156	38.6	171,705	54.3	22,371	7.1
1987*	321,238	116,726	36.3	178,271	55.5	26,241	8.2	328,959	122,655	37.3	181,406	55.1	24,898	7.6
1988*	334,056	119,673	35.8	186,362	55.8	28,021	8.4	342,079	129,904	38.0	186,051	54.4	26,124	7.6
1989*	323,706	112,157	34.6	178,686	55.2	32,863	10.2	351,984	135,971	38.6	186,501	53.0	29,512	8.4
1990*	315,837	110,144	34.9	169,495	53.7	36,198	11.5	319,525	114,879	36.0	171,253	53.6	33,393	10.5

* Includes new stations

Source: Metro Cordon Count Program

EXHIBIT A.8: PERSONS TRIPS CROSSING EXTENDED CORE CORDON, 1985–1990

	07:00 A.M. – 10:00 A.M. Inbound							15:30 P.M. – 18:30 P.M. Outbound						
	Total Persons	Auto & Taxi		Transit		GO Rail		Total Persons	Auto & Taxi		Transit		GO Rail	
		No.	%	No.	%	No.	%		No.	%	No.	%	No.	%
West														
1985	61,387	37,909	61.8	8,777	14.3	14,701	23.9	65,620	42,210	64.3	9,583	14.6	13,827	21.1
1986	66,719	43,347	65.0	8,793	13.2	14,579	21.9	59,239	37,245	62.9	8,194	13.8	13,800	23.3
1987	56,173	33,082	58.9	6,646	11.8	16,445	29.3	65,144	41,702	64.0	7,624	11.7	15,818	24.3
1988	59,312	33,847	57.1	7,630	12.9	17,835	30.1	64,892	39,748	61.3	8,720	13.4	16,424	25.3
1989	64,573	32,373	50.1	11,357	17.6	20,843	32.3	80,900	50,621	62.6	10,715	13.2	19,564	24.2
1990	67,303	35,830	53.2	8,280	12.3	23,193	34.5	75,007	44,120	58.8	10,243	13.7	20,644	27.5
North														
1985	79,076	14,260	18.0	64,816	82.0	0	0.0	89,470	18,503	20.7	70,967	79.3	0	0.0
1986	81,235	13,710	16.9	67,525	83.1	0	0.0	85,950	19,908	23.2	66,042	76.8	0	0.0
1987	95,064	14,406	15.2	80,658	84.8	0	0.0	86,516	17,573	20.3	68,943	79.7	0	0.0
1988	87,539	14,116	16.1	73,423	83.9	0	0.0	90,556	19,051	21.0	71,505	79.0	0	0.0
1989	88,886	14,041	15.8	74,845	84.2	0	0.0	85,418	18,169	21.3	67,249	78.7	0	0.0
1990	81,612	14,003	17.2	67,609	82.8	0	0.0	84,423	18,289	21.7	66,134	78.3	0	0.0
East														
1985	42,127	27,788	66.0	5,570	13.2	8,769	20.8	48,922	33,279	68.0	6,938	14.2	8,705	17.8
1986	51,012	34,461	67.6	7,604	14.9	8,947	17.5	51,089	34,569	67.7	7,949	15.6	8,571	16.8
1987	52,148	34,899	66.9	7,607	14.6	9,642	18.5	44,241	30,447	68.8	4,714	10.7	9,080	20.5
1988	50,486	33,493	66.3	6,807	13.5	10,186	20.2	44,506	29,557	66.4	5,249	11.8	9,700	21.8
1989	50,288	30,926	61.5	7,342	14.6	12,020	23.9	48,076	29,983	62.4	8,145	16.9	9,948	20.7
1990	50,752	30,716	60.5	7,031	13.9	13,005	25.6	54,317	35,049	64.5	6,519	12.0	12,749	23.5
Total														
1985	182,590	79,957	43.8	79,163	43.4	23,470	12.9	204,012	93,992	46.1	87,488	42.9	22,532	11.0
1986	198,966	91,518	46.0	83,922	42.2	23,526	11.8	196,278	91,722	46.7	82,185	41.9	22,371	11.4
1987	203,385	82,387	40.5	94,911	46.7	26,087	12.8	195,901	89,722	45.8	81,281	41.5	24,898	12.7
1988	197,337	81,456	41.3	87,860	44.5	28,021	14.2	199,954	88,356	44.2	85,474	42.7	26,124	13.1
1989	203,747	77,340	38.0	93,544	45.9	32,863	16.1	214,394	98,773	46.1	86,109	40.2	29,512	13.8
1990	199,667	80,549	40.3	82,920	41.5	36,198	18.1	213,747	97,458	45.6	82,896	38.8	33,393	15.6

Source: Metro Cordon Count Program

EXHIBIT A.9: PERSONS TRIPS CROSSING DOWNTOWN CORE CORDON, 1975–1990

	07:00 A.M. – 10:00 A.M. Inbound							15:30 P.M. – 18:30 P.M. Outbound						
	Total Persons	Auto & Taxi		Transit		GO Rail		Total Persons	Auto & Taxi		Transit		GO Rail	
		No.	%	No.	%	No.	%		No.	%	No.	%	No.	%
West														
1975	13,282	7,026	52.9	6,256	47.1	0	0.0	22,905	14,082	61.5	8,823	38.5	0	0.0
1977	12,935	7,430	57.4	5,505	42.6	0	0.0	24,104	15,131	62.8	8,973	37.2	0	0.0
1979	13,085	7,190	54.9	5,895	45.1	0	0.0	23,905	15,947	66.7	7,958	33.3	0	0.0
1981	11,927	6,447	54.1	5,480	45.9	0	0.0	23,312	14,917	64.0	8,395	36.0	0	0.0
1982	11,865	6,862	57.8	5,003	42.2	0	0.0	22,260	14,635	65.7	7,625	34.3	0	0.0
1984	12,596	7,720	61.3	4,876	38.7	0	0.0	25,959	17,473	67.3	8,486	32.7	0	0.0
1986	13,371	8,761	65.5	4,610	34.5	0	0.0	23,715	15,913	67.1	7,802	32.9	0	0.0
1988	13,796	9,394	68.1	4,402	31.9	0	0.0	23,378	16,720	71.5	6,658	28.5	0	0.0
1990	13,440	8,491	63.2	4,949	36.8	0	0.0	24,312	17,799	73.2	6,513	26.8	0	0.0
North														
1975	70,168	6,551	9.3	63,617	90.7	0	0.0	63,870	9,443	14.8	54,427	85.2	0	0.0
1977	67,223	6,364	9.5	60,859	90.5	0	0.0	74,932	9,536	12.7	65,396	87.3	0	0.0
1979	70,061	6,685	9.5	63,376	90.5	0	0.0	67,738	10,213	15.1	57,525	84.9	0	0.0
1981	78,365	6,796	8.7	71,569	91.3	0	0.0	79,985	11,089	13.9	68,896	86.1	0	0.0
1982	80,644	6,519	8.1	74,125	91.9	0	0.0	78,243	10,001	12.8	68,242	87.2	0	0.0
1984	80,432	7,297	9.1	73,135	90.9	0	0.0	76,433	10,727	14.0	65,706	86.0	0	0.0
1986	74,276	6,957	9.4	67,319	90.6	0	0.0	76,384	10,901	14.3	65,483	85.7	0	0.0
1988	80,836	7,426	9.2	73,410	90.8	0	0.0	81,078	9,885	12.2	71,193	87.8	0	0.0
1990	74,425	7,214	9.7	67,211	90.3	0	0.0	74,854	9,530	12.7	65,324	87.3	0	0.0
East														
1975	21,859	13,776	63.0	8,083	37.0	0	0.0	22,397	14,083	62.9	8,314	37.1	0	0.0
1977	21,927	14,168	64.6	7,759	35.4	0	0.0	22,509	14,760	65.6	7,749	34.4	0	0.0
1979	23,097	15,314	66.3	7,783	33.7	0	0.0	22,053	14,509	65.8	7,544	34.2	0	0.0
1981	24,267	17,459	71.9	6,808	28.1	0	0.0	22,383	14,541	65.0	7,842	35.0	0	0.0
1982	22,011	15,097	68.6	6,914	31.4	0	0.0	23,915	15,413	64.4	8,502	35.6	0	0.0
1984	24,476	18,166	74.2	6,310	25.8	0	0.0	22,325	15,613	69.9	6,712	30.1	0	0.0
1986	22,448	15,905	70.9	6,543	29.1	0	0.0	22,566	15,693	69.5	6,873	30.5	0	0.0
1988	23,875	17,781	74.5	6,094	25.5	0	0.0	20,991	16,093	76.7	4,898	23.3	0	0.0
1990	21,617	15,416	71.3	6,201	28.7	0	0.0	23,313	17,363	74.5	5,950	25.5	0	0.0
South														
1975	20,748	9,570	46.3	1,096	5.3	10,082	48.4	16,439	6,413	39.0	1,111	6.8	8,915	54.2
1977	23,631	10,140	42.9	1,056	4.5	12,435	52.6	20,273	6,457	31.9	1,260	6.2	12,556	61.9
1979	26,710	9,459	35.4	1,132	4.2	16,119	60.3	22,946	6,518	28.4	858	3.7	15,570	67.9
1981	31,002	9,326	30.1	1,294	4.2	20,382	65.7	25,295	4,538	17.9	1,389	5.5	19,368	76.6
1982	31,139	9,110	29.3	1,116	3.6	20,913	67.2	26,487	5,804	21.9	703	2.7	19,980	75.4
1984	34,302	10,467	30.5	989	2.9	22,846	66.6	29,156	6,338	21.7	1,148	3.9	21,670	74.3
1986	36,143	11,581	32.0	1,036	2.9	23,526	65.1	29,115	5,691	19.5	1,053	3.6	22,371	76.8
1988	36,987	8,335	22.5	631	1.7	28,021	75.8	31,664	4,526	14.3	1,014	3.2	26,124	82.5
1990	46,443	9,780	22.2	465	1.1	36,198	76.7	37,604	4,872	13.0	1,370	3.6	31,362	83.4
Total														
1975	126,057	36,923	29.3	79,052	62.7	10,082	7.9	125,611	44,021	35.0	72,675	57.9	8,915	7.1
1977	125,716	38,102	30.3	75,179	59.8	12,435	9.9	141,818	45,884	32.4	83,378	58.8	12,556	8.9
1979	132,953	38,648	29.1	78,186	58.8	16,119	12.1	136,642	47,187	34.5	73,885	54.1	15,570	11.4
1981	145,561	40,028	27.5	85,151	58.5	20,382	14.0	150,975	45,085	29.9	86,522	57.3	19,368	12.8
1982	145,659	37,588	25.8	87,158	59.8	20,913	14.4	150,905	45,853	30.4	85,072	56.4	19,980	13.2
1984	151,806	43,650	28.8	85,310	56.2	22,846	15.0	153,873	50,151	32.6	82,052	53.3	21,670	14.1
1986	146,238	43,204	29.5	79,508	54.4	23,526	16.1	151,780	48,198	31.8	81,211	53.5	22,371	14.7
1988	155,494	42,936	27.6	84,537	54.4	28,021	18.0	157,111	47,224	30.1	83,763	53.3	26,124	16.6
1990	155,925	40,901	26.8	78,826	51.4	36,198	22.0	160,083	49,564	31.0	79,157	49.4	31,362	19.6

Source: Metro Cordon Count Program

EXHIBIT A.10: PERSON TRIPS CROSSING DOWNTOWN CORDON, 1975–1990

	07:00 A.M. – 10:00 A.M. Inbound							15:30 P.M. – 18:30 P.M. Outbound						
	Total Persons	Auto & Taxi		Transit		GO Rail		Total Persons	Auto & Taxi		Transit		GO Rail	
		No.	%	No.	%	No.	%		No.	%	No.	%	No.	%
West														
1975	88,013	21,535	24.5	66,478	75.5	0	0.0	110,689	35,028	31.6	75,661	68.4	0	0.0
1977	81,958	21,893	26.7	60,065	73.3	0	0.0	103,066	36,943	35.8	66,123	64.2	0	0.0
1979	96,686	22,065	22.8	74,621	77.2	0	0.0	113,946	36,279	31.8	77,667	68.2	0	0.0
1981	105,951	20,895	19.7	85,056	80.3	0	0.0	118,996	35,589	29.9	83,407	70.1	0	0.0
1982	104,789	20,956	20.0	83,833	80.0	0	0.0	126,688	35,047	27.7	91,641	72.3	0	0.0
1984	111,439	23,205	20.8	88,234	79.2	0	0.0	121,664	39,805	32.7	81,859	67.3	0	0.0
1986	101,406	25,001	24.7	76,405	75.3	0	0.0	121,126	37,781	31.2	83,345	68.8	0	0.0
1988	115,835	26,220	22.6	89,615	77.4	0	0.0	124,365	36,998	29.7	87,367	70.3	0	0.0
1990	104,112	25,202	24.2	78,910	75.8	0	0.0	119,715	41,225	34.4	78,490	65.6	0	0.0
North														
1975	55,719	6,598	11.8	49,121	88.2	0	0.0	62,360	7,965	12.8	54,395	87.2	0	0.0
1977	55,044	5,313	9.7	49,731	90.3	0	0.0	55,991	7,136	12.7	48,855	87.3	0	0.0
1979	43,672	6,017	13.8	37,655	86.2	0	0.0	48,782	8,083	16.6	40,699	83.4	0	0.0
1981	57,431	5,911	10.3	51,520	89.7	0	0.0	56,219	8,103	14.4	48,116	85.6	0	0.0
1982	49,712	6,517	13.1	43,195	86.9	0	0.0	54,657	8,254	15.1	46,403	84.9	0	0.0
1984	49,256	6,300	12.8	42,956	87.2	0	0.0	53,774	7,705	14.3	46,069	85.7	0	0.0
1986	46,694	6,455	13.8	40,239	86.2	0	0.0	52,380	8,272	15.8	44,108	84.2	0	0.0
1988	49,595	6,703	13.5	42,892	86.5	0	0.0	49,436	7,566	15.3	41,870	84.7	0	0.0
1990	42,703	5,656	13.2	37,047	86.8	0	0.0	47,087	7,147	15.2	39,940	84.8	0	0.0
East														
1975	79,554	29,576	37.2	49,978	62.8	0	0.0	83,548	30,956	37.1	52,592	62.9	0	0.0
1977	81,762	30,401	37.2	51,361	62.8	0	0.0	87,456	34,731	39.7	52,725	60.3	0	0.0
1979	79,302	32,131	40.5	47,171	59.5	0	0.0	83,893	32,855	39.2	51,038	60.8	0	0.0
1981	87,304	33,883	38.8	53,421	61.2	0	0.0	88,225	33,036	37.4	55,189	62.6	0	0.0
1982	84,360	30,384	36.0	53,976	64.0	0	0.0	94,128	33,483	35.6	60,645	64.4	0	0.0
1984	93,241	35,653	38.2	57,588	61.8	0	0.0	90,173	33,980	37.7	56,193	62.3	0	0.0
1986	87,582	32,308	36.9	55,274	63.1	0	0.0	90,189	33,860	37.5	56,329	62.5	0	0.0
1988	93,990	34,532	36.7	59,458	63.3	0	0.0	85,864	32,937	38.4	52,927	61.6	0	0.0
1990	84,542	30,408	36.0	54,134	64.0	0	0.0	89,648	33,554	37.4	56,094	62.6	0	0.0
South														
1975	20,748	9,570	46.3	1,096	5.3	10,082	48.4	16,439	6,413	39.0	1,111	6.8	8,915	54.2
1977	23,631	10,140	42.9	1,056	4.5	12,435	52.6	20,273	6,457	31.9	1,260	6.2	12,556	61.9
1979	26,710	9,459	35.4	1,132	4.2	16,119	60.3	22,946	6,518	28.4	858	3.7	15,570	67.9
1981	31,002	9,326	30.1	1,294	4.2	20,382	65.7	25,295	4,538	17.9	1,389	5.5	19,368	76.6
1982	31,139	9,110	29.3	1,116	3.6	20,913	67.2	26,487	5,804	21.9	703	2.7	19,980	75.4
1984	34,302	10,467	30.5	989	2.9	22,846	66.6	29,156	6,338	21.7	1,148	3.9	21,670	74.3
1986	36,143	11,581	32.0	1,036	2.9	23,526	65.1	29,115	5,691	19.5	1,053	3.6	22,371	76.8
1988	36,987	8,335	22.5	631	1.7	28,021	75.8	31,664	4,526	14.3	1,014	3.2	26,124	82.5
1990	46,443	9,780	21.1	465	1.0	36,198	77.9	37,604	4,872	13.0	1,370	3.6	31,362	83.4
Total														
1975	244,034	67,279	27.6	166,673	68.3	10,082	4.1	273,036	80,362	29.4	183,759	67.3	8,915	3.3
1977	242,395	67,747	27.9	162,213	66.9	12,435	5.1	266,786	85,267	32.0	168,963	63.3	12,556	4.7
1979	246,370	69,672	28.3	160,579	65.2	16,119	6.5	269,567	83,735	31.1	170,262	63.2	15,570	5.8
1981	281,688	70,015	24.9	191,291	67.9	20,382	7.2	288,735	81,266	28.1	188,101	65.1	19,368	6.7
1982	270,000	66,967	24.8	182,120	67.5	20,913	7.7	301,960	82,588	27.4	199,392	66.0	19,980	6.6
1984	288,238	75,625	26.2	189,767	65.8	22,846	7.9	294,767	87,828	29.8	185,269	62.9	21,670	7.4
1986	271,825	75,345	27.7	172,954	63.6	23,526	8.7	292,810	85,604	29.2	184,835	63.1	22,371	7.6
1988	296,407	75,790	25.6	192,596	65.0	28,021	9.5	291,329	82,027	28.2	183,178	62.9	26,124	9.0
1990	277,800	71,046	25.6	170,556	61.4	36,198	13.0	294,054	86,798	29.5	175,894	59.8	31,362	10.7

Source: Metro Cordon Count Program

EXHIBIT A.12: AVERAGE TRAVEL TIMES AND SPEEDS ON MAJOR EAST-WEST ARTERIALS (BETWEEN SPADINA AVENUE AND PARLIAMENT STREET)

ROAD SECTION	AVERAGE DISTANCE (km)	DIRECTION OF FLOW	AM PEAK		OFF PEAK		PM PEAK	
			AVG. TRAVEL SPEED (km/hr)	AVG. TRAVEL TIME (min : sec)	AVG. TRAVEL SPEED (km/hr)	AVG. TRAVEL TIME (min : sec)	AVG. TRAVEL SPEED (km/hr)	AVG. TRAVEL TIME (min : sec)
BLOOR STREET	2.77	east-bound	19.0	8:46	18.0	9:13	20.0	8:17
		west-bound	19.0	8:44	15.3	10:53	18.7	8:52
HARBORD / WELLESLEY STREET	2.88	east-bound	19.6	8:49	17.3	9:58	15.4	11:13
	2.98	west-bound	19.1	9:22	17.8	10:03	17.2	10:23
COLLEGE / CARLTON STREET	2.69	east-bound	22.2	7:14	18.3	8:46	17.2	9:22
		west-bound	20.2	8:01	17.3	9:20	20.5	7:54
DUNDAS STREET	2.75	east-bound	20.6	7:59	15.0	10:55	13.4	12:18
		west-bound	17.7	9:20	14.1	11:46	14.2	11:38
QUEEN STREET	2.69	east-bound	19.4	8:14	14.9	10:53	16.1	10:02
		west-bound	18.9	8:29	13.1	12:25	13.9	11:46
ADELAIDE STREET	2.70	east-bound	27.8	5:50	18.0	9:00	15.4	10:34
RICHMOND STREET	2.71	west-bound	22.4	7:15	21.4	7:35	19.5	8:20
KING STREET	2.71	east-bound	21.7	7:28	17.3	9:23	15.0	10:50
		west-bound	18.2	8:53	15.6	10:26	14.6	11:08

EXHIBIT A.11: AVERAGE TRAVEL TIMES AND SPEEDS ON MAJOR NORTH-SOUTH ARTERIALS

ROAD SECTION	AVERAGE DISTANCE (km)	DIRECTION OF FLOW	AM PEAK		OFF PEAK		PM PEAK	
			AVG. TRAVEL SPEED (km/hr)	AVG. TRAVEL TIME (min : sec)	AVG. TRAVEL SPEED (km/hr)	AVG. TRAVEL TIME (min : sec)	AVG. TRAVEL SPEED (km/hr)	AVG. TRAVEL TIME (min : sec)
SPADINA AVENUE (Front to Dupont)	3.77	north-bound	25.1	9:01	24.2	9:19	25.5	8:52
		south-bound	27.9	8:08	23.4	9:40	21.7	10:26
UNIVERSITY AVENUE (Front to Davenport)	3.58	north-bound	27.3	7:51	24.0	8:58	24.6	8:44
		south-bound	26.3	8:09	22.3	9:38	22.7	9:26
BAY STREET (Front to Davenport)	3.18	north-bound	20.7	9:14	16.2	11:47	16.6	11:34
		south-bound	20.2	9:26	15.0	12:47	15.3	12:29
YONGE STREET (Front to Davenport)	3.05	north-bound	19.3	9:25	14.0	13:04	18.6	9:53
		south-bound	22.0	8:15	15.7	11:38	17.4	10:32
CHURCH STREET (Front to Bloor)	2.62	north-bound	22.3	7:00	16.2	9:39	18.9	8:16
		south-bound	20.5	7:41	18.1	8:42	20.3	7:45
JARVIS STREET (Front to Bloor)	2.58	north-bound	14.6	10:41	19.2	8:03	29.9	5:09
		south-bound	27.9	5:33	25.4	6:05	19.8	7:51